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Daniel, Mary Regina

**THE DEVELOPMENT OF A TOOL TO MEASURE PERCEPTIONS OF
PHYSICAL EDUCATION TEACHING BEHAVIORS FOUND IN SECONDARY
SCHOOLS**

The University of North Carolina at Greensboro

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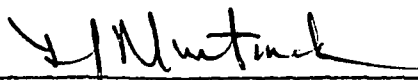
by

Mary Regina Daniel

A Dissertation submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

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1983

Approved by



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APPROVAL PAGE

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The purpose of this study was to determine the reliability and validity of an instrument for gathering perceptions of physical education teaching behaviors. A subsequent purpose was to describe differences of perceptions of teaching behaviors of teachers and students within secondary physical education classes.

Within the study, answers were sought for two questions which pertained to the establishment of validity and reliability of the instrument and the examination of factors that might be found in the instrument. Two other questions examined the differences of perceptions between teachers and students and between male and female students.

Eight randomly selected secondary physical education teachers and 197 secondary students from the Greensboro City Schools system participated in the study during the week of September 22-29, 1980. Teachers and students completed the Daniel Teacher Behavior Perception Scale (DTBPS) which was administered during the first part of class.

The DTBPS was developed by the investigator during a preliminary study. The DTBPS consists of 30 teacher behaviors found during physical education classes. The scale used to describe teaching behaviors included ratings of never perceived, sometimes perceived, and often perceived. Reliability established by item analysis was reported at .81.

The data collected from the DTBPS were nominal in nature; therefore, analysis included an item analysis, principal axis factor analysis, Chi square goodness of fit test, multivariate analysis of variance, and univariate analysis of variance.

Within the limits of the exploratory study, it was concluded that physical education teaching behaviors can be rated reliably by students using the DTBPS. Furthermore, there are factors within the DTBPS that can account for a significant proportion of variance in student perception scores. In addition, there are significant differences in perceptions on some items between teachers and students and male and female students. Furthermore, factor scores yielded no significant differences at the .05 level between teachers and students while two factors were significant at the .05 level between male perceptions and female perceptions of teaching behaviors.

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CHAPTER I

INTRODUCTION

Since the early part of the twentieth century, the behavior of teachers and students has been studied by educational researchers for the purpose of understanding the teacher's and students' influence on the teaching-learning process. Several major factors initiated the development of the scientific study of teaching.

One major factor was the development of curriculum and supervision specialists and associations during the early 1900's. Early educational researchers and psychologists saw a need to study scientifically different aspects of education in order to improve the teaching-learning process. The development of statistical methods and procedures also added merit to the analysis and interpretations of data gathered from the study of teaching.

Another major factor influencing the growth of the study of teaching was the test and measurement movement founded in the field of psychology. Psychologists started conducting experimental research relating to physiological measurement during the 1800's and IQ tests were developed at the turn of the century. These testing procedures led to the development of different types of systems for use in the testing of social, psychological, and educational areas.

A third factor related to the study of the teaching-learning process was "accountability." Though the term has received much attention in the last 10 years, the concept has been around since the early passage of laws demanding taxes for public education. Historically and currently, taxpayers have expected that their dollars be spent wisely. It has been through the auspices of educators that tax dollars have been spent for improving the teaching-learning process, thereby helping to satisfy taxpayers' expectations.

Since the early 1900's, educational researchers, supervisors, and administrators have used instruments for gathering data concerning the teacher and the teaching-learning process. Stevens (1912), Horn (1914), Barr (1921), Burton (1922), Morrison (1924), and Barr and Burton (1926) were some of the early pioneers in the development of systems to supplement instructional and supervisory processes. Though questionable in fruitfulness, the development of systems through the years to gather data about teachers and their behaviors has been voluminous since these earlier inceptions.

Types of instruments that have been used in gathering research on teaching behavior have included ratings, checklists, diaries, anecdotes, Likert scales, semantic differential scales, videotapes, and interaction analysis systems. Many of these scales have been effective in describing the perceptions of teachers and their teaching behaviors, as well as students' perceptions of their teachers (Brophy &

Good, 1974; Gage, 1958; Rosenthal & Jacobson, 1968; Solomon & Kendall, 1977). Lynch advocated that we need "insights into how our perceptions of others affect our actions toward them" (1963, p. 91). The classroom is a viable place for investigating how perceptions may influence teacher behavior. Individuals do not perceive each other in the same light; therefore, teachers, students, and administrators, and classroom observers may form different perceptions concerning teacher behaviors.

One of the reasons for conducting teaching behavior research is that teachers need descriptive information in order to ascertain how their behavior is being perceived by others as well as themselves (Locke, 1977). It is important that teachers know "remembered behaviors or perceived behaviors" as they are rated by themselves and their students because there could be differences in perceptions (Kerlinger, 1964). Discrepancies in perceptions may lead to misconceptions of interpretations of teaching behaviors by students. How a student perceives a certain behavior of a teacher may be entirely different from the way the teacher intended the behavior to be perceived (Batchelder, 1976; Flanders, 1970).

Discrepancies in perceptions may also lead to poor teacher-student relationships which could have negative effects on the teaching-learning process (Brophy & Good, 1974). By comparing their perceptions of behaviors between students and themselves, teachers will be in a better position to change their behavior.

Some studies have dealt with perceptions of teaching behavior by students (Beck, 1967; Bledsoe & Brown, 1968; Clark & Creswell, 1978; Cogan, 1958; Murray, 1972; Stayrook, Winne, & Corno, 1978; Thomas, 1980; Whitfield, 1976). The comparison of perceptions of teaching behaviors between teachers and students, however, has been less frequent. Most of the previously mentioned studies have researched perceptions of teachers in relation to such variables as student achievement, verbal behavior, nonverbal behavior, interactions in the classroom, work load of teachers, and effectiveness. Some researchers (Braskamp, Caulley, & Costin, 1979; Doyle & Crichton, 1978; Freese & West, 1972; Short, 1976; Stewart, 1977; Webb & Nolan, 1955) have studied the comparison of perceptions between teachers and students.

Physical educators have a unique teaching-learning environment and need to identify where possible perceptual discrepancies occur between the teacher and student. It is necessary, therefore, to develop a framework from which perceptions of physical education teaching behaviors can be discussed. Such a framework would provide more accurate estimates of actual teaching behaviors and would be an advancement over the nonsystematic judgments of teaching behavior (Locke, 1977). Before physical education teachers change their behaviors, they must know what is actually being perceived by their students. The development of an instrument especially suited to the physical education environment could also allow researchers to ascertain if feedback from

students concerning teaching behaviors could be used as a viable tool for changing teaching behaviors. An instrument could also be used to find out whether male students perceive their teachers the same way that female students do. In addition, an instrument for measuring physical education teachers' behaviors could allow teachers a form of self-evaluation that could be used between teachers and their classes without outside administrative and supervisory reverberation.

Statement of the Problem

The purpose of this study was to determine the reliability and validity of an instrument for gathering perceptions of physical education teaching behaviors. A subsequent purpose was to describe differences of perceptions of teaching behaviors of teachers and students within secondary physical education classes. The study was designed to answer the following questions:

1. Is the Daniel Teaching Behavior Perception Scale a valid and reliable instrument for measuring perceptions of teaching behaviors of high school students and teachers?
2. Are there unique factors that account for a significant proportion of variance in student perception scores?
3. Are there significant differences in the perceptions of teaching behaviors as perceived by high school students and their physical education teachers on item and factor scores?
4. Are there significant differences in the teaching behaviors of physical education teachers as perceived by

their male and female high school students on item and factor scores?

Definition of Terms

The following terms are defined as they were used in this study:

Teaching Behaviors--observable teaching behaviors that occur intentionally and unintentionally in the teaching-learning process.

Perceptions--the interaction or transaction between individuals and their environment. They receive information from the external world which in some way modifies their experience and behavior (Warr & Knapper, 1968, p. 2).

Daniel Teaching Behavior Perception Scale (DTBPS)--a scale that describes the perceptions of the physical education teacher's behavior as held by students and the teacher.

Secondary Level--grades 10-12 of the public school systems.

Experienced Teachers--physical education teachers who have three or more years of full-time teaching experience in the public school system at the secondary level.

Assumptions

The following assumptions were made:

1. Teachers and students involved in this sample are representative of the population of physical educators and students in the schools of the city of Greensboro, North Carolina.

2. The DTBPS accommodates most observable teaching behavioral perceptions found in the secondary physical education setting.

3. Teachers and students, participating in the study, would respond honestly on the DTBPS.

Scope of the Study

The study included randomly selected secondary physical education teachers and their students from the Greensboro City Schools system. Eight teachers and 197 students from four secondary schools were used in the study. The selected teaching behaviors were limited to those listed and described on the DTBPS.

Several factors placed limitations on the study: (a) teaching behaviors were those evident through the use of the DTBPS; (b) the data measured actual instead of ideal perceptions of teaching behaviors by students and teachers; (c) there was no control of variables such as socioeconomic status, number of pupils in class, race, and intelligence; and (d) an analysis of perceptions of male teaching behaviors to female teaching behaviors was not included due to the lack of segregation of classes by sex.

Significance of the Study

Research to date has shown the importance of studying teaching behavior. Different tools have been developed since the beginning of the twentieth century for the purpose of studying the teacher behavior in the teaching-learning process. Kerlinger (1964) pointed out that there is a classification of observational tools in education that does

not include the moment-to-moment observing and recording of behavior. This type of observation is called the rating of "remembered behaviors or perceived behaviors."

The development of an instrument to identify and describe perceptions of teaching behaviors by students and teachers is necessary if discrepancies are to be found in perceptions of teaching behaviors. If discrepancies do exist, they may be fundamental in hampering student-teacher relationships. Student-teacher relationships can cause problems in the teaching-learning process (Brophy & Good, 1974).

It is hoped that the results of this study will provide a framework for teachers in assessing actual teaching behaviors as perceived by students and teachers. This framework could be used to generate feedback to teachers from their students concerning their teaching behavior in physical education settings. The feedback could help physical education teachers self-evaluate their teaching behaviors. From an analysis of their own behavior, teachers may see a need to change their behavior because the behavior they are exhibiting may not be what they think it is. In addition, the DTBPS may provide a format for future systems for assessing teaching behaviors in physical education settings.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to determine the reliability and validity of an instrument for describing perceptions of physical education teaching behaviors. A subsequent purpose of this study was to describe differences of perceptions of teaching behaviors within secondary physical education classes as perceived by teachers and students. Procedures included in the review of literature are as follows: (a) theoretical considerations in behavioral perceptions, (b) behavioral assessment in education, and (c) behavioral assessment in physical education.

Theoretical Considerations in Behavioral Perceptions

Many believe that the origin of perception developed from a philosophical field of inquiry. Early philosophical origins of perceptions have been traced to the work of Hume, Locke, and Descartes (Allport, 1955; Dember, 1960; Warnock, 1967; Wolman, 1960).

Regardless of origin, perception still remains one of the most controversial areas in philosophy and psychology. The theory of perception usually adheres to a phenomenological or physiological basis (Allport, 1955). The development of a theory of behavioral perception has been synonymous with the development of the field of psychology. The field

of psychology has branched into different realms of inquiry, such as psychoanalysis, gestaltism, field theories, holistic theories, behaviorism, biosocial behaviorism, and social psychology. Likewise, the study of perceptions has been theorized from different realms of inquiry. The definition and theory of perception resides within the school of thought in which the psychologist belongs.

Another aspect of perception that has been studied is its relation to the social environment. This aspect is concerned with social interaction of individuals and subsequent perceptions of and by these individuals. The groundwork for the analyses of social perceptions has been laid by social psychologists Blumer (1969), Cooley (1902), Goffman (1959), Heider (1944), Kuhn (1964), and Mead (1934) plus the work of personality theorists such as Adler (1929), Horney (1945), Murray (1938), and Sullivan (1947).

Due to the work of these theorists and other psychologists, the field of psychology has seen various attempts at explaining, expanding, and defining perception; however, defining perception has been found to be difficult. Dember attributed this problem to the large number of psychological theories (1960, p. 2). As Dember suggested: "Its meaning ultimately resides in the function it plays within a complete theory of psychology" (1960, pp. 2-3).

In 1955 Allport wrote a book in which he reviewed 13 major theories of perception and a number of other related conceptions. He concluded that no one theory explained

everything about perception and its process. He found inconsistencies and explanations of terminology to be different in various theories. He also found some principles that converged from the theories (Allport, 1955, pp. 295-296). He proposed the following in formulating a theory of perception:

We must of course use phenomenological description in conjunction with as full and careful a study as possible of the physiological aspects and a record of the subjects outwardly observable behavior. Such an objectively oriented part of the investigation is basic to any attempt to construct a sound and general theory. The study of these two conceptual integrations within the total pattern of the organism's behavior, thus constitute a workable basis for the theory of perception. (Allport, 1955, p. 56)

Some terms to evolve in relation to perception of individuals have been role perception, person perception, social perception, self-perception, interpersonal perception, and person cognition. The present study will be concerned with person perception, especially the perception of behaviors exhibited by individuals.

Person Perception

In discussing person perception, Peak (1958) used the term, psychological structure, to explain a method of relationships that take place between identifiable events. Psychological parts of structure could be speech symbols, events, traits, liking or disliking in response to stimuli, or a complexity of group characteristics (p. 337). She advocated that strength and multiplicity of relations between the psychological parts of structure are an important determinant in the activation of person perception (Peak, 1958, p. 350).

She used three types of criteria to illustrate the strength and multiplicity of relations between psychological structures:

(a) perceptions of persons as liked or disliked, (b) relations of persons to the acts which they perform, and (c) balance versus unbalance structures. An example of how strength and multiplicity of relations affect students' perceptions could be where, because a student likes a teacher, most perceptions of that teacher's behavior in the classroom would be perceived by the student as favorable regardless of situations that arise in the classrooms.

The structure of performance to the relations of persons to the acts which they perform, could relate to a student's favorable or unfavorable perception of a teacher's behavior due to the subject and methodology that is being taught. The subject and methodology could cloud the possibility of the students' forming positive perceptions of the teacher's behavior. For example, if a student disliked physical education, his negative perceptions might overlap to the teacher, instead of just toward the subject matter.

An example of balance versus unbalance structures refers to the concept that if a student perceives a teacher's behavior as favorable, then the teacher's perception of the student is probably favorable. Likewise, unfavorable perceptions by the student may instigate unfavorable perceptions by the teacher. For example, if Johnny dislikes a particular teacher, then there may be a tendency for this teacher to dislike

Johnny due to his perceptions. Within the classroom, there is a tendency for teachers to try to attain a balance structure between them and their students.

Heider (1958) proposed that the difference in the perception of people as compared to the perception of objects is due to a particular kind of function known as representation. He stated:

Representation makes possible the aiming or directing of actions toward certain goals, it makes possible positive or negative tendencies toward certain parts of the environment, and it allows for the fact that persons can be for or against each other, that they can fit or not fit each other. (Heider, 1958, pp. 27-28)

In Heider's discussion of social perception, he brings out distinctions that are associated with perceptual processes in forming perceptions of individuals. Four points were mentioned as being important in the study of perception of persons: (a) relevant objects or contents, (b) stimulus patterns, (c) attribution, and (d) balance sentiment configuration (Heider, 1958, p. 22). Relevant objects or contents refer to the fact that people are action centers, rather than objects. In other words, people possess the property of representation. Stimulus patterns refer to such things as traits, stereotypes, acts, intentions, and sentiments. Attribution, on the other hand, refers to impressions of judgments we form of others, while balance sentiment configurations refers to the tendency of people to want to have a balance situation or evaluation of others (Heider, 1958, pp. 22-25). All of these concepts are viable in the

perception of teaching behavior found in the classroom. Due to the fact that teachers are action centers instead of objects, they exhibit representation. Stimulus patterns of teachers refers to traits, stereotypes, acts, intentions, and sentiments that they carry into the classroom, while attribution refer to impressions or judgments that students may have of teachers. Balance sentiment configuration refers to the tendency of teachers to have similar evaluation of all their students.

Similar to Heider's theory of representation, Tagiuri and Petrullo (1958) preferred to use the term person perception when objects have representation and intentionality. This referred to the fact that persons possess psychological properties, such as traits, abilities, ideas, and emotions. They suggested that forming perceptions of persons is a type of evaluation that one does automatically without knowing the processes involved. In contrast to Heider's (1958) four points concerning the perception of persons, Tagiuri and Petrullo (1958) emphasized that apperception and cognition are used most of the time in forming perceptions of persons. According to Tagiuri and Petrullo (1958), there are three elements involved in forming perceptions of individuals --the situation, the other person, and the perceiver. They advocated that there are two directions or methods in studying person perception. One is looking at stimulus and perceiver characteristics and their interactions, while the other is concerned with the relation between perception and

action and allows for the study of interpersonal action (Tagiuri & Petrullo, 1958). Tagiuri's (1958) separate article on social preference stated: "For what people think of a person unquestionably influence their behavior toward him as well as, in the long run, the behavior of the very person himself" (p. 329). It appears that the behaviors of teachers and students are a direct influence in the perception that each hold for each other. The role of behavior in the classroom should be investigated to ascertain interpersonal perception.

Warr and Knapper (1968) defined perception as:

the interaction or transaction between an individual and his environment; he (sic) receives information from the external world which in some way modifies his (sic) experience and behavior. (p. 2)

Their work deals with person perception and event perception. Like Tagiuri (1958), they purported that behaviors toward individuals were related to perceptions of individuals. How one behaves toward another is related to how they perceive that person. They also acknowledge that person perception and interpersonal behavior is complex to study. Warr and Knapper (1968) also contend that though there are differences in people and objects, the process of perception of both are predominantly the same due to a set of underlying principles. They felt that the study of events was also important because person perception takes place within events.

Warr and Knapper's (1968) process of perception involved three different components, an attributive component, an

expectancy component, and an affective component. The attributive component is concerned with attributing overt and covert characteristics to people. Two types of judgments that fall under this heading are episodic and dispositional judgments. Episodic judgments refer to judgments made about persons during a particular episode of behavior, while dispositional judgments refer to judgments made about someone's permanent characteristics (Warr & Knapper, 1968, pp. 8-9). In episodic judgments, a teacher may be perceived as being irritable due to having found a couple of students cheating on a test, while dispositional judgments about the same teacher may be perceiving the same teacher as warm and cordial most of the time.

The present study used the definition of perception as "the interaction or transaction between an individual and his environment; he receives information from the external world which in some way modifies his experience and behavior" (Warr & Knapper, 1968, p. 2). Within the confines of this study, students' perceptions of teaching behaviors is the main line of inquiry, along with teachers' perceptions of their own behaviors. It is felt that the previously mentioned theories and definitions of perception will add support in helping to understand the perception of high school physical education teachers' behaviors.

Behavioral Assessment in Education

Research in Teaching Behavior

Historically, the act of teaching has been debated as being a science, an art, and a craft. Over a period of time, other notable definitions and descriptors of teaching have included pedagogical moves (Bellack et al., 1966); strategies (Smith et al., 1967; Taba & Elzey, 1964); categories (Anderson, 1939; Flanders, 1960; Withall, 1948-49); functions (Hughes, 1974), and frameworks (Hyman, 1968). Various educators have defined teaching according to their framework of reference. Smith viewed teaching as "a system of actions intended to induce learning" (1961, p. 88). Gage (1963) referred to teaching as "any inter-personal influence aimed at changing the ways in which other persons can or will behave" (p. 96). Hughes defined teaching "in terms of functions the teacher behavior, verbal and nonverbal, performs for the child, group, or class to whom it is directed" (1974, p. 145).

Through a perusal of educational research, one can conclude that there is no common consensus as to a definition of teaching. It might be best to view teaching as Cheffers does, "teaching is an art, developed, enriched and refined through science" (Cheffers, Mancini, & Martinek, 1980, p. 1). This study's frame of reference for defining teaching behavior is the behaviors of teachers that have been perceived that occurred intentionally and unintentionally in the teaching-learning process.

Descriptive research in teaching behavior has been gathered by using various types of instruments. Types of instruments that have been used in gathering research on teaching behavior have included ratings, checklists, diaries, anecdotes, Likert scales, semantic differential scales, Q-sort techniques, questionnaires, videotapes, critical incidents, interviews, and interaction analysis systems. A historical perspective of significant contributors and the types of systems used in collecting descriptive data will be summarized in the following section.

One of the earliest works in research in teacher behavior was done by Stevens (1912). He recorded the number and quality of questions that were asked during recitations in various subjects. These recordings were used as an index to teaching efficiency. He proposed that a large number of questions provided poor efficiency in instruction, while a small number did not necessarily provide good efficiency. Stevens also felt that thought-provoking questions based on associations and discriminations were superior to memory questions.

Horn (1914) was also one of the first educators during the early part of the twentieth century that devised a systematic method for observing and recording behavior in the classroom. Even though the behavior of students was the behavior being recorded, this systematic method of gathering data was precedent to future studies concerning the gathering of data of behavior of students and teachers. Horn devised

various symbols, such as squares and circles, for recording verbal and action responses of students in various grade levels. The number of responses of students were correlated with achievement. On the whole, the students that responded the most were the higher achieving students in the various classes.

Early work done by Barr (1921), Barr et al. (1924), Brueckner (1925), Burton (1922), Midthun (1928), Morrison (1924), and others cited in Barr (1931) contributed to the categorizing and analyzations of teaching behaviors. Though their research did not deal specifically with teaching behaviors, but overlapped with other teaching dimensions, such as effectiveness, teaching techniques, teacher characteristics, etc., it was an early beginning into the systematic method of observing actual teaching behavior in the classroom.

Anderson and his colleagues (1939, 1945, 1946a, 1946b), did extensive work in researching behaviors found in the classroom. Under two broad headings of dominative and integrative, they classified teaching behaviors found in the classrooms of children. They also developed categories for classifying students' behaviors. Their work was one of the first pieces of research to utilize an indirect to direct ratio (I.D.), which represented the portion of integrative to dominative behavior used by teachers. The initial efforts by Anderson were to develop a reliable tool for measuring dominative and integrative behavior of teachers. Later studies revealed that children, who had teachers with more

integrative behaviors, had a lower number of distracting and nonconforming behavior. They also found that in the classroom, the direction of influence was from teacher to pupil.

Influenced by Anderson's research and the work of Lippitt (1940), Withall (1948-49) developed seven categories for measuring the social-emotional climate found in classrooms. Categories one through three were deemed to be learner-centered while five through seven were teacher-centered. During one aspect of validating his instrument, Withall asked the students of a particular teacher to evaluate the teacher's methods and classroom situation. This evaluation was compared to the social-emotional climate index categorization and it was found that the index categorization was similar to perceptions held by students. Though Withall's scale was concerned only with verbal statements, his work represented another attempt to assess what actually goes on in the classroom through the analysis of teaching behaviors.

Robert F. Bales (1950), a sociologist, was instrumental in influencing educators in the development of instruments to be used in the classroom. He was known for his research in interaction analysis processes. He developed an instrument with 12 categories for rating interaction between people. This instrument was a forerunner for the development of instruments to measure interaction analysis within the classroom setting.

Influenced by Bales (1950) and the research of Withall (1948-49), Flanders (1960) started work on applying interaction

analysis to the classroom. He developed what is commonly known as the Flanders' Interaction Analysis System (FIAS). FIAS provided a way of observing interactive behavior in the classroom. He also proposed the use of a matrix which allowed an estimate of the amount of interdependence between consecutive coded behaviors. Flanders used some of the 12 categories from Bales' (1950) research, but revised his instrument to consist of 10 categories, 7 teacher categories, 2 student categories, and 1 category for silence, confusion, or anything other than teacher or student talk. Similar to Anderson's grouping of behaviors into integrative or dominative headings, Flanders grouped teacher behaviors into indirect and direct behaviors.

Some of the previously mentioned researchers have made attempts to categorize different components of teachers and their behavior for a more effective way of studying the teaching-learning process. More recent classification systems concerning research on teaching behaviors have been done by Cheffers et al. (1980), Ornstein (1971), Shavelson and Dempsey-Atwood (1976), Simon and Boyer (1967), and Smith et al. (1967). These researchers have taken various studies and classified research according to different lines of inquiry.

Though teaching behavior is complicated to study due to many variables in the classroom, educational researchers believe that teaching behavior is significant enough to investigate scientifically regardless of inherent limitations. The study of teaching behavior will allow researchers to

attain desirable goals in the teaching-learning process, which consequently affects the learners. The method of planning desirable outcomes for the learner can be strengthened through the study of process variables (Batchelder & Cheffers, 1977). In other words, research in any of the four orientations may supplement knowledge in the other three orientations.

Research in teaching behavior has proven and will continue to be a source of information for teacher education programs, for supervisors and administrators, and for self-evaluations from teachers. Finally, research in teaching behavior will add credibility to the profession of education as a field of scientific inquiry.

Research on Perceptions of Teaching Behaviors

The study of perceptions in relation to the teaching-learning process stems from the work of social psychologists who studied the influence of individual and group behaviors upon each other. Naturally, educators have always felt a need to study the influences of behaviors of students and teachers found in the classroom. Beginning in the early fifties, the word perception was found frequently in relation to research concerning teachers and pupils. Perceptions of behaviors have been correlated to different variables found in the classroom, such as teacher characteristics, teacher effectiveness, student outcomes, subject content, classroom organization, and classroom climate.

One of the first significant pieces of research related to perception in conjunction with teacher-pupil relationships was

done by Gage and Suci (1951). Twenty teachers were selected to try to predict the percentage of students who would respond "yes" to an inventory of 67 items pertaining to school. Teachers also completed the Cook-Leeds Teacher Attitude Inventory while students rated their teachers on a 52-item inventory. They suggested a replication of their research but found that the ability to elicit positive affect from pupils was positively related to the teachers' ability to perceive social perception of the students.

Jenkins and Lippitt (1951) were also some of the first researchers to explore in the area of interpersonal perceptions. Not only did they survey perceptions held by students and teachers, but they also included the perceptions of parents. Other research along this continuum has been completed by Bledsoe and Brown (1968); Brophy and Good (1974); Clark and Creswell (1978); Cogan (1958); Davidson and Lang (1960); Dieken and Fox (1973); Gage (1958); Gage, Leavitt, and Stone (1955); Hall and Myers (1977); Short (1976); Solomon and Kendall (1977); Stayrook, Corno et al., (1978); Stone (1979); Thomas (1980); Weinstein and Middlestadt (1979); Whitfield (1976); and Zahorik (1970).

Research by Newton and others, (1973, 1976, 1981) concentrates on the study of the level of perceptual analysis of ongoing behavior. This approach to the study of perception has been different in comparison to other research. This approach has been concerned with the process of perception rather than the results. Newton (1973) viewed students as

actively participating in the process of perception. He designed a technique for analyzing perceptual analysis of students, known as "unitization" technique. The technique permits the study of characteristics of the organization of perceptions of ongoing behavior by pressing a button when one meaningful action ends and a different one begins. He concluded that individuals perceive according to situations and that attribution theories that presume people perceive in constant units are wrong. This study also revealed that perceivers analyze observed behavior at different levels.

In a recent study by Newton and Koopman (1981) students were given fine unit, natural unit, or large unit unitization instructions. In fine unit instructions students were asked to indicate the smallest steps of the lesson that seemed natural and meaningful to them. In natural instructions, students were asked to respond to any size steps found in the lesson that seemed natural and meaningful to them, while in large unit instructions, the students were to indicate the largest steps that seemed meaningful and natural. They found some support for the hypothesis that students that operate at fine levels of perceptual analysis had more favorable evaluations of instructors and are associated with concept learning.

Newton and Koopman (1981) also suggested that besides studying the level of perceptual analysis of students, that there be research on the structure and content of learners' perceptual segmentations of ongoing instruction. They feel

that this should be a new field of inquiry in the teaching-learning process.

Though there are variations in terminology and methodology, most of the research in the area of perceptions of behaviors in the teaching-learning process has concluded that perceptions held by teachers and pupils can be correlated with cognitive, social, emotional, and physical variables found in the classroom. Some variables used are teaching effectiveness, pupil outcomes, and subject content. These findings make it imperative that the study of perceptions of behaviors is a viable source of descriptive research that should be conducted in the classroom. More research in this area would permit educators the ability to make wise decisions concerning how their behavior may affect interpersonal relations found in the classroom. In order to study perceptions of teaching behaviors, various instruments have been developed. The use of rating scales is one type of instrument used and has been instrumental in recording perceptions of teaching behaviors and furthering research in this area.

The Use of Rating Scales

The use of rating scales goes back several centuries, with physical measurements such as temperature and wind velocity being some of the first variables to be measured. The use of rating scales in measuring human behavior made sound advancement from psychologists at the beginning of the twentieth century (Horrocks, 1964).

In education, various types of rating scales have been used, such as well-known subjective grading systems. Historically, students, supervisors, and administrators have rated their teachers according to given criteria. Remmers (1963) stated "no approach to the measurement of variables in research on teaching has been used more often than the rating method" (p. 329). Though some rating scales have been designed to measure teacher effectiveness, teacher characteristics, pupil outcomes and pupil behaviors, most rating scales measure to some degree implicit or explicit behaviors of teachers.

Rating scales have been classified by Guilford (1936) into five major headings: numerical, standard, graphic, cumulated points, and forced choice (Remmers, 1963). The rating scale devised in this study for gathering data concerning behavior of secondary physical education teachers could be classified under the heading of cumulated points. In other words, assigning weights to the responses permits a sum for the number of items on the rating scale. This sum could be used in establishing a mean for pupils' ratings of their teacher.

Remmers and other researchers suggested that rating scales exhibit the following criteria: objectivity, reliability, sensitivity, validity, and utility. These criteria will be discussed in relation to the development of the teacher behavior scale in Chapter III.

Researchers have voiced caution to types of errors that may occur when using rating scales.

Types of errors often mentioned with reference to rating scales include those due to "halo effect," i.e., ratings of specific traits being influenced by general impressions of the person rated; "logical error," where similar ratings are given to traits which seem logically related; and "proximity error," where similar ratings are given to adjacent traits on the rating scale. Other types of errors include "stereotype error" (all persons of a certain kind are believed to be generally superior or inferior by the rater), "leniency of generosity error," and "error of central tendency," where average ratings predominate when the rater is uncertain. (Engelhart, 1972, p. 183)

Various statistical methods have been devised for correcting these types of errors and obtaining scales that are valid and reliable (Guilford, 1936; Horrocks et al., 1964; Remmers, 1963). Horrocks (1964) contended that "the efficiency of any rating system fails in the final analysis upon the efficiency of the rater, his training and level of motivation, and adequacy as a judge" (p. 604). Dieter (1973) avers that teachers can change their behavior if they receive feedback from students which are presented with rating scales that ask specific and pertinent questions. He also suggests that words used in the scales have little variance in interpretation. In other words, students are the individual raters and are seen as measuring devices. The rating scale is not the measuring device; it is a method of categorizing what is to be rated (Remmers, 1963).

Ratings by Students

Historically, students have been used in rating their teachers. There have been supporters and opponents of the

use of students' ratings of teachers. Most supporters argue that the students are the ones that observe the teacher the most and therefore have a better perception of behaviors that occur on a continual basis. They also argue that students are the designated receivers of teaching behaviors and that as the receivers they should respond to teaching behaviors so the teacher will know how his behavior is coming across to his students.

Opponents argue that students may be biased in rating their teachers due to personally liking or disliking the teacher. Some opponents also argue that students may not understand the intent behind various teaching behaviors, and therefore, give low ratings. Another argument is that teachers may teach according to the rating device used. There is also fear that teachers may lose jobs due to poor ratings from students.

Research has shown relationships between ratings of teachers and grades. Penfield (1978) cited the work of four different researchers as showing a slight positive relationship between expected grades and student ratings of teachers. Research by Frey (1976), by Garverick and Carter (1962), and by McKeachie, Lin, and Mann (1971) purport little relationship between grades and student ratings of teachers.

Various dimensions of ratings have been investigated, such as rater training effects (Bernardin, 1978), different directions for raters (Centra, 1976), different purposes for ratings (Sharon, 1970), time lapse between ratings (Frey, 1976),

election of advance courses (McKeachie & Solomon, 1958), student characteristics (Doyle & Whitely, 1979), age, sex, and attractiveness (Goebel & Cashen, 1979), attractiveness and nonverbal behavior (Chaikin et al., 1978). Results of studies have revealed significant but sometimes conflicting results.

Within the last decade, Doyle and Whitely (1974, 1976, 1979) have been studying student ratings of instructors. Much of their work has been concentrated at the college level. For example, Doyle and Whitely (1979) found inconsistent results when comparing student ratings of teachers to student characteristics.

In 1974, Doyle and Whitely found that classroom achievement correlated with student ratings of teacher effectiveness. Doyle and Whitely (1976) along with Grasha (1975) suggested that researchers should put more emphasis on studying the rating process that students use in rating students.

While there has been little research on the processes involved in rating teacher behavior, other recent research has focused on the validity of rating scales. McKeachie and Lin (1978) studied students' perceptions of teachers in comparison to observed teacher behavior. They tried to ascertain whether students' perceptions of teacher's actual behaviors would correlate with trained observer categorizations of teacher acts of warmth or agreement. The warmth category was defined as expressing a feeling of personal liking, affection, or friendliness, while the agreement category was defined as

the response to the role performance of the student. They concluded that student ratings of teaching were based on teacher behavior.

While the previous study used students and observers, a study by Clark and Creswell (1978) illustrated that trained observers' perceptions of teachers' nonverbal behavior on videotape were perceived differently in comparison to students' perceptions. Students perceived nonverbal behavior as more encouraging. Therefore, it would appear that the work of Clark and Creswell (1978) and McKeachie and Lin (1978) support the use of students' perceptions as a valid way of rating teaching behaviors.

A factor analytic study by Veldman and Peck (1963) consisted of junior high and high school students of 554 student teachers filling out a 38-item Pupil Observation Survey. From the evaluations, five factors were found by students concerning teaching behavior: I. Friendly, Cheerful, Admired; II. Poised, Knowledgeable; III. Interesting, Preferred; IV. Strict Control; and V. Democratic Procedure.

The research by Veldman and Peck collaborated the earlier work of Ryans (1960) which factor analyzed teacher-classroom behavior. In Ryans' work, trained observers that had experience in teaching were used to rate teacher-classroom behavior. The three factors he found were: (a) Pattern X: understanding, friendly versus aloof, egocentric, restricted teacher's behavior; (b) Pattern Y: responsible, businesslike,

systematic versus evading, unplanned shipshod teacher behavior, and (c) Pattern Z: stimulating, imaginative, surgent, or enthusiastic versus dull, routine teacher behavior.

Though the majority of research on student ratings have been conducted at the college level, several studies have furnished significant results at the elementary and high school level. Paraskevopoulos wrote:

Beyond the problem of reliability, student ratings allow us to see how the pupils perceive and interpret the behavior of their teachers. This subjective perception, more than the independently and objectively assessed behavior by trained observers, supervisors, and other "outsiders," determines essentially the interpersonal relationships in the classrooms and colors its social and emotional climate. (1968, p. 25)

Behavioral Assessment in Physical Education

Current Research in Physical Education

Trethaway and Locke purported that research in physical education has lent itself to being known as a follower in the education realm, rather than a leader (Locke, 1977). Most research in teaching behavior of physical educators has been influenced by current interests, methods, programs, etc., developed from educational researchers outside physical education (Locke, 1977).

Research in teaching behavior in physical education has been directed to the study of various independent and dependent variables found in the physical education setting such as styles of teaching (Boschee, 1972; Countiss, 1976; Dougherty, 1970; Mawdsley, 1977); competency-based programs (Boehm, 1974; Darst, 1974; Hamilton, 1974); effectiveness

(Colvin, 1973; Laughlin, 1972; Rochester, 1976; Sweeting, 1972); perceptions (Bookhout, 1967; Edwards, 1973; Esposito, 1975; Laughlin, 1972; Short, 1976; Stewart, 1977; Thomas, 1980); pupil achievement (Melograno, 1971; Taylor, 1976; Yerg, 1977); Academic Learning Time (Aufderheide, 1980; Birdwell, 1980); dyadic interaction (Allard, 1979; Brown, 1980; Martinek & Johnson, 1979; Martinek & Mancini, 1979); teacher personality (Bahneman, 1971; Melograno, 1971; Rider, 1973; Wuest, 1980); and preservice preparation (Cramer, 1977; Currens, 1977; Davis, 1979; Gusthart, 1982; Hendrickson, 1975; Hutslar, 1976; Keilty, 1975; McBride, 1981).

Not until the mid-1960's did the physical education profession see research in teaching behavior. Locke (1977) purported that research in teaching behavior composed only five percent of all published reports in any given year.

All this evidence supports the assertion that the activities of teaching are rational events with discoverable cause and effect relationships. The behavioral regularities of the gymnasium are as knowable as any other event in which humans participate. The overt activities of all the actors in a physical education class have an observable and thus measurable reality. (locke, 1977, p. 4)

The development of tools to categorize and measure teaching behavior in physical education has been instrumental in allowing researchers to pursue the various dimensions found in the physical education environment. Tools have been developed from outside and within the profession of physical education and used for the purpose of categorizing and measuring teaching behavior.

Bookhout (1967) was one of the first physical educators to analyze teaching behavior in a physical education setting (Locke, 1977). She obtained data on the teaching behavior of 36 women physical education teachers in relation to the social-emotional climates of their classes. To collect data on their behavior, she used the Observation Schedule and Record (OScAR) developed by Medley and Mitzel (1958). To obtain which perceptions from students concerning "teaching behaviors which relaxed interpersonal tension," she administered the Reed Pupil Inventory. After a factor analysis on the data, she found six patterns of behavior. Two of the patterns, integrative interactions and restraining directions, were found to relate to the climate of the classroom. The social-emotional climate measured by the students, varied significantly among the classes.

Following this research, other studies in teaching behavior of physical educators appeared in the literature. One of the more frequently used tools in physical education was Flanders' Interaction Analysis System (FIAS), (Bahneman, 1971; Nygaard, 1972).

Dougherty (1970) was one of the first researchers in physical education to see a need to modify Flanders' tool. He used the modified tool to compare the effects of teaching styles of command, task, and individual program on the development of physical fitness and motor skills. He found that in attaining the goals of physical fitness and motor skills, that the ideal teaching style was dependent on the goals

sought, as well as teacher and student personality, time, and any number of other variables. He concluded that the command style of teaching was best for attaining rapid fitness gains while the task or individual program was the more appropriate style for attaining student independence and involvement and giving individual attention to students.

Other researchers that modified Flanders' instrument for use in the physical education setting were Boschee (1972), Cheffers (1973), Countiss (1976), Ebbs (1975), Gasson (1971), Kiemele (1972), Melograno (1971), and Stewart (1977). Cheffers' modification of FIAS, known as Cheffers' Adaption of Flanders' Interaction Analysis System (CAFIAS) has probably had the greatest use in physical education research. Cheffers' modification consisted of adding a nonverbal dimension, and identification of who was doing the teaching, and an identification of change in class structure. The following researchers in physical education have used CAFIAS in researching various variables and dimensions of the physical education environment: Agnew (1977), Batchelder (1976), Faulkner (1976), Hendrickson (1975), Keilty (1975), Lombardo (1979), Mancini et al. (1975), Martinek (1976), Martinek & Mancini (1979), Mason, 1978), Mawdsley (1977), Rochester (1976), Stewart (1977), Thomas (1980), Wright (1980), and Wuest (1980).

One of the first physical educators to devise their own tool for the systematic observation of teaching behaviors in the elementary physical education environment was done by Barrett (1969). She developed a tool which consisted of

32 categories that described the behavior of the teacher and students in movement education at the primary level (Stewart, 1977). Others that have developed their own systems since the work of Barrett have been Brown (1980), Catelli (1979), Christenson (1981), Fishman (1974), Griffin (1980), Hupe (1974), Hurwitz (1975), Laubach (1975), Lupien (1970), Rankin (1975), Short (1976), Showers (1974), Siedentop & Hughley (1975), and Taylor (1976).

In final analysis, the study of the systematic observation of physical education teacher behavior has increased since 1967. Different tools have been borrowed, modified, or developed for gathering teaching behavior data and comparing this data to variables found in the physical education environment. The development of this relatively new area of inquiry in physical education attests to the desire of physical educators to systematically analyze what is happening in physical education classes. Consequently, information in this area may some day lead to a viable and useful theory of instruction in physical education.

Perceptions of Teaching Behavior in Physical Education

Thus far, the majority of studies reviewed have dealt with observational systems that have been used by trained observers that recorded teaching behaviors as they occurred. The trained observers have been teachers, graduate students, administrators, educational researchers, etc. Few studies in physical education have used the type of observation called the rating of "remembered behaviors or perceived behaviors." This type of

rating of behaviors does not include the moment-to-moment observing and recording of behaviors, but a recall of behaviors that were used in research studies to collect data on "remembered behaviors or perceived behaviors" of teachers. This data has provided a valuable way of identifying teaching behaviors without the outside use of observers in the classroom. Johnson and Bolstad (1973) contend that observers can limit the generalization of observation data on people being observed. If students are used to collect data on "remembered behaviors or perceived behaviors" of teachers, then observer reactivity may become minimized.

Perceptions have been gathered but the emphasis of the perceptions have been on different variables found in the physical education setting. Perceptions of effectiveness of instructors have been investigated by Colvin (1973), Garrison (1977), Laughlin (1972), and Sweeting (1972). Allard (1979) and Stone (1979) completed work concerned with the perceptions teachers had of their physical education students.

Stone (1979) found that junior high students perceived themselves higher than do teachers with respect to specific behaviors and across four factors that were analyzed. The three female teachers did not significantly differ in perceptions of their female students when compared to the three male teachers' perceptions of their male students.

Allard's (1979) research consisted of gathering data on the teaching behavior of five junior high school teachers. The Individualized Teacher Behavior Analysis System was the

tool used to gather the data on the teachers while teacher perception of the level of each student's participation were collected through the Teacher Ranking Test. Data concerning perceptions were analyzed if the students were ranked consistently both times.

Allard found significant differences in teaching patterns with the lecturing category consisting of 61%. In comparing perceptions of the level of each student's participation to the eight ITBAS categories, there was no clear pattern found because of the variability among the five teachers and 10 classes.

Within the athletic situations, numerous studies have been completed that utilized the perceptions of coaches by their athletes (Bailey, 1972; Curtin, 1977; Danielson et al., 1975; Grastorf, 1980; Larson, 1973; Longmuire, 1972; Meyer, 1972; Smoll et al., 1978; and Stallard, 1974). Many of these studies found that athletes' perceptions were different from coaches' perceptions of themselves, what the coaches actually were observed doing, or expected behaviors of the coaches.

Studies by Bailey (1972), Larson (1973), Longmuir (1972), and Stallard (1974) researched perceptions held by athletes of the ideal coach and the real coach. Significant discrepancies were found in actual and ideal coach images held by athletes.

Research that compared self-perceptions of coaches to players' perceptions was completed by Curtin (1977), Grastorf (1980), and Meyer (1972). Besides the rating of the ideal

coach to the real coach, Longmuir's study also compared self-perception of coaches to player perception. The work of Curtin (1977), Meyer (1972), and Longmuir (1972) found significantly higher self-perceptions than players' perceptions to coaches. Grastorf's (1980) study found that behaviors that are instructional or personal may be described differently and that players recall coaches' behavior differently than coaches would describe themselves.

Studies that focused on perceptions of coaching behaviors in relation to variables such as effectiveness, characteristics, player relationships, and personalities were conducted by Larson (1973) and Smoll et al. (1978). Larson (1973) found significant differences did exist in perceptions of coaching behaviors held by the reference groups of coaches, students, principals, athletic directors, booster club members, various members of the student body and various community members. Smoll et al. (1978) analyzed the relationship between player perceptions of behaviors, player attitudes, and coach-player relationships of 51 Little League baseball teams. In comparing the perceptions of coaching behaviors gathered between observers and athletes' perceptions, there was agreement in the frequency of punitive behaviors received by athletes. The rest of the data indicated a difference in perceptions from players when compared to observational data.

Edwards' work (1973) was concerned with the effect that intermittent or fixed schedule feedback from students had on changing teachers' behaviors in physical education classes.

Though the number of teachers studied was only four, students were asked to rate their teachers' behavior three times a week for three weeks. Teachers were given feedback concerning (a) the amount of feedback via praise or constructive criticism given to students and (b) the amount of time given to students without instruction for physical skill practicing. A second dimension was to use "master teachers" for rating the four teachers. The third dimension was to find out how accurate students and master teachers were in judging behavior when compared to actual observed behavior of teachers. He concluded that three weeks was too short a period of time for producing changes in teacher behavior and that feedback about teacher behavior may be superior when administered on an intermittent schedule than on a fixed schedule. It was found that students' and master teachers' perceptions were grossly different in several instances and that as a group, students were more accurate in their perceptions of actual teaching behaviors as compared to master teachers.

Short's study (1976) was concerned with devising a rating scale to measure competencies of secondary physical education teachers. Thirty-eight of the 65 male and female secondary physical education teachers were rated on Short's Competency Indicator for Secondary Physical Educators (CISPE) by their department head and themselves. The 65 teachers were ranked by the school system coordinator; however, all of the female instructors were rated on Weber's (1975) Teacher Competency Questionnaire (TCQ) by department heads. In determining

content validity, Short found no significant differences between the ratings by students and instructors. Department head ratings of the instructor were significantly different from students' ratings. The hypothesis was rejected that there was a significant difference in the mean scores of the CISPE of instructors ranked as the bottom 19 instructors compared to the instructors ranked as the top 19 instructors. Short found a positive relationship between the scores of the TCQ and self-assessment scores on the CISPE. In other words, teachers saw themselves as department heads perceived them in the teaching environment.

Thomas' research (1980) dealt with self-perceptions and student perceptions of 34 physical education teachers at the 7th grade level and their relationship to dimensions of CAFIAS. The Adjective Check List (ACL) validated by Anderson (1968) was administered to students for the purpose of identifying affective characteristics of teachers. From a high scoring range on the checklist, a "high affect" group of five female and five male teachers, were identified as having scores congruent with scores of their students. From a low scoring range, a "low affect group" of five female and five male teachers were identified as having scores congruent with scores on their students. CAFIAS was administered for the purpose of identifying teacher behaviors, while teachers and pupils gave positive or negative symbols to phases describing the teacher in four headings: personal appearance, attitude toward activity, affect, and teaching and organization.

Though students and teachers were perceiving affective characteristics of teachers and not all teaching behaviors were observable, pupils did not perceive any significant difference in male and female teachers. In comparing student perceptions of teachers in the high affect group to teachers in the low affect group, students of the high affect group had more positive comments than students from the low affect group. The teachers from the high affect group gave themselves more positive symbols than did teachers from the low affect group. Male teachers evaluated themselves more positively than female teachers. Female teachers were found to use more verbal behavior than males, and the category of verbal and nonverbal praise and acceptance was significantly different between high and low groups. Though Thomas' work was primarily concerned with relating affective characteristics of teachers to dimensions on CAFIAS, she could identify students that had congruent scores with teachers' scores on the Adjective Check List.

Another area of teaching behavior in physical education that has been investigated to a certain degree has been self-perception of teaching behavior by the teachers (Davis, 1979; Esposito, 1975; Stewart, 1977). Some of the following studies have combined the study of self-perceptions with student perceptions of teaching behaviors.

Esposito's research (1975) was concerned with the self-perception of student teachers. The ACL was administered to 11 males and 8 females while they were student teaching at

the secondary level. It was administered before student teaching, and during the 5th and 9th weeks of student teaching. The scale was divided into two sections for assessing self-perception, a reference section (general self) and specific self (teaching self). A significant difference was found between the two dimensions. In relating to how student teachers thought they were being perceived by cooperating and supervising teachers, it was found that these perceptions did not change during student teaching. In addition, self-perception in teaching situations was not related to teaching performance.

In 1977, Stewart completed research in teaching behavior using 12 physical education teachers at the primary, intermediate, junior high, and senior high grade levels. Twenty-five teacher behavior categories and four climates were included in an observation instrument that was selected from four other scales found in the physical education profession. Teachers also filled out a questionnaire that included items pertaining to personal information, school-related information and perceived teacher behavior of self. This information was used to ascertain if significant correlations between context and presage variables and teaching behaviors existed. The questionnaire consisted of 29 dependent variables. A Spearman rank order correlation was computed between the 24 independent variables and the 29 dependent variables. In relating self-perceived teaching behaviors to observed teaching behaviors, nine relationships were found: age with general praise,

school location with general praise, skill of class with specific praise, skill of class with general skill feedback, school location with specific skill feedback, teaching level with specific skill feedback, teaching level with student modeling, skill of class with teacher modeling, and marital status with teaching modeling.

Research by Davis (1979) used feedback from student teachers and cooperating teachers about their teaching behaviors in order to see if three behaviors (increase in positive statements, decrease in negative statements, and increase in content information) would change. Ten teachers at the elementary level were the subjects. The subjects were divided into three groups, with Group I receiving self-feedback and feedback from the cooperating teachers, Group II receiving self-feedback, and Group III received traditional feedback. Group I changed their behavior in the desired direction, while in Group II inconsistencies of directions were found concerning the three behaviors. Group III also experienced inconsistencies in directions. Though all groups increased in the amount of positive statements, Group I showed the greatest increase.

CHAPTER III

PROCEDURES

The purpose of this study was to determine the reliability and validity of an instrument for describing perceptions of physical education teaching behaviors. A subsequent purpose was to describe differences of perceptions of teaching behaviors within secondary physical education classes as perceived by teachers and students. The procedures included the completion of a preliminary study and main study. The preliminary study answered question one.

1. Is the Daniel Teaching Behavior Perception Scale a valid and reliable instrument for measuring perceptions of behaviors of high school students and teachers?

The main study was designed to answer the following questions:

2. Are there unique factors that account for a significant proportion of variance in student perception scores?

3. Are there significant differences in the perceptions of teaching behaviors as perceived by high school students and their physical education teachers on item and factor scores?

4. Are there significant differences in the teaching behaviors of physical education teachers as perceived by their male and female high school students on item and factor scores?

Preliminary Study

The preliminary study was completed in order to develop and refine a rating scale that could be used in the physical education setting to describe observable behaviors. The initial purpose of the preliminary study, a result of an independent study completed in the spring of 1978, focused on a comparison of observable coaching and teaching behaviors. The scale that was developed and defined in the preliminary study will be discussed in the following phases: Phase I: Content and Logical Validity of the DTBPS; Phase II: Reliability of the DTBPS; and Phase III: Development of a Parallel Form of the DTBPS.

Phase I: Content and Face Validity of the DTBPS

A review of literature from the physical education and general education field was undertaken to identify behaviors of physical education teachers. Fifty-seven behaviors cited more frequently in the literature were chosen to be in the scale (see Appendix A).

The 57 behaviors of teaching were submitted to a panel of physical education faculty members employed at a college located in the central part of North Carolina for the purpose of determining logical validity. The members of the panel were instructed to read and rate each item as either unclear or clear in terms of its relevance to the physical education environment. Appendix A shows the form used by the college faculty panel. Those items that were found to be unclear or nonexclusive with other items were revised or omitted from

the scale. Items 5, 20, 21, 22, 26, 27, 28, 29, 30, 44, and 52 were revised for easier reading and clarification. Items 4, 6, 7, 8, 11, 18, 31, and 34 were omitted from the scale because they were not exclusive with other items. When these eight items were eliminated, the rating scale consisted of 49 items (see Appendix B).

Freeman purported that rating scales do not have the normal criteria and standards pertaining to validity that other measures do. According to Freeman (1962):

The questions to be asked regarding the validity of a rating scale are these: Does it meet the specifications of a sound system? Are the traits being rated by the scale significant in the setting or occupation for which the individual is being considered? If these two questions are answered satisfactorily, then the ultimate usefulness (that is predictive validity) of the scale will depend upon the soundness (reliability) of the judges' ratings. (p. 536)

The two previous questions could be answered satisfactorily regarding the DTBPS, thus establishing the usefulness of the scale for measuring perceptions of teaching behaviors.

Although there are numerous ways of responding to rating scales, a three-point response category was chosen. Guilford (1954) and Horrocks (1964) contended that the number of response categories is an empirical matter, while Matell and Jacoby (1971) maintained that a dichotomous or three-point Likert scale is adequate. Guilford (1954) cautioned against a two-point response category due to coarseness. Three response levels were chosen in order to add an alternate response category between two extremes. The response format is included in the rating form found in Appendix B.

Phase II: Reliability of the DTBPS

Reliability of the DTBPS was assessed by applying item analysis. An item analysis was used to determine inter-item reliability.

Item analysis. Sixty physical education teachers affiliated with 30 junior high and 30 senior high schools in North Carolina were randomly selected from a pool of North Carolina Schools to participate in the phase of the study to determine reliability. The subjects were sent an introductory letter by mail (see Appendix C) along with a self-addressed stamped envelope, and the behavior scale of 49 items. Responses were returned within a 4-week period. The responses of 25 respondents were used in establishing internal consistency via item analysis. An item analysis determines the difficulty and discriminating power of each item. The Hoyt Estimate of Reliability Index is generated to determine the overall internal consistency of the scale (Nelson, 1974). This procedure is also used to identify items that need to be revised or eliminated before the scale is administered (Engelhart, 1972, p. 361). Output features of the analysis included the mean, standard deviations, number of items, highest score, lowest score, Hoyt Estimate of Reliability, and the standard error of measurement. The Hoyt Estimate of Reliability was .78 for 49 items. The standard deviation was 8.16 and the standard error of measurement was 3.81.

Table 1 lists the 49 items which were subjected to an item analysis and which had to have an index of discrimination

Table 1
Summary Item Statistics of 49 Items

Item Number	Mean	<u>SD</u>	Correlations
1	2.778	.456	.406
2	2.683	.534	.354
3	2.794	.481	.424
4	1.968	.647	.046
5	2.873	.336	.302
6	2.524	.592	.293
7	2.619	.580	.506
8	2.190	.715	.075
9	1.778	.706	.091
10	1.413	.613	.141
11	1.825	.730	.338
12	2.127	.751	.325
13	2.016	.729	.092
14	1.476	.759	.000
15	2.016	.635	.309
16	2.079	.548	.154
17	1.873	.635	.485
18	2.794	.408	.378
19	2.302	.586	.245
20	2.619	.521	.385

Table 1 (cont'd.)

Item Number	Mean	<u>SD</u>	Correlations
21	2.460	.534	.378
22	2.254	.621	.064
23	2.730	.447	.412
24	1.937	.644	.004
25	2.349	.572	.307
26	2.175	.636	.267
27	1.476	.669	-.109
28	2.175	.493	.311
29	2.429	.817	.370
30	2.587	.613	.346
31	2.000	.475	.130
32	2.905	.296	.416
33	2.794	.446	.291
34	2.873	.336	.211
35	2.302	.613	.211
36	2.825	.383	.108
37	2.619	.551	.466
38	2.524	.564	.493
39	1.841	.545	-.097
40	2.397	.610	.349
41	1.206	.481	.078

Table 1 (cont'd.)

Item Number	Mean	<u>SD</u>	Correlations
42	1.730	.545	-.133
43	2.841	.368	.455
44	1.714	.658	.134
45	2.794	.446	.127
46	2.587	.586	.204
47	2.905	.296	.416
48	2.492	.592	.405
49	2.778	.419	.289

correlation of .200 or above to be retained as recommended by Nelson (1974). Four items were retained that were below the cut-off value. The researcher felt these items were important to include as part of the study; therefore, interpretability should be done with caution. In addition, Item 34, which had a correlation of .211, was dropped due to the fact that race was not an issue and all other items were void of race responses. This reduced the scale to 30 items which can be found in Appendix D in its final form. Items 4, 8, 9, 10, 13, 14, 16, 22, 24, 31, 34, 36, 39, 41, 44, 45, and 46 were deleted.

Table 2 shows the result of another Hoyt Estimate of Reliability that was run on the revised 30-item scale. A high internal consistency coefficient of .87 was obtained on the 30-item scale. The standard deviation of 7.32 and the standard error of measurement was found to be 2.64.

Phase III: Development of a Parallel Form of the DTBPS

Since the purpose of this study was to determine the perceptions of teaching behaviors by students as well as teachers, it was necessary to develop parallel forms of the DTBPS. The scale had been developed originally for teachers, so the next step was to develop a parallel form for students.

On May 26, 1980, the student form of the DTBPS was given to 20 students selected from 9th-grade classes in one school within the Greensboro City Schools system. Appendix E shows the form of the DTBPS that was given to the students. Students

Table 2
Summary Item Statistics of the
30 Item Scale

Item Number	Mean	<u>SD</u>	Correlations
1	2.600	.577	.582
2	2.600	.645	.339
3	2.720	.542	.627
4	2.760	.436	.322
5	2.440	.507	.317
6	2.520	.653	.553
7	1.640	.638	.450
8	2.000	.764	.415
9	2.080	.572	.285
10	1.960	.539	.474
11	2.680	.476	.502
12	2.280	.542	-.030
13	2.520	.586	.415
14	2.280	.458	.463
15	2.720	.458	.419
16	2.280	.542	.172
17	2.120	.600	.154
18	2.240	.436	.439
19	1.760	.723	.413
20	2.680	.476	.618

Table 2 (cont'd.)

Item Number	Mean	SD	Correlations
21	2.800	.408	.453
22	2.800	.408	.249
23	2.280	.458	.450
24	2.560	.583	.448
25	2.520	.510	.609
26	2.360	.638	.488
27	2.760	.436	.390
28	2.920	.277	.279
29	2.400	.645	.402
30	2.840	.374	.155

were asked to read and respond to each item by checking either of the following responses listed next to each item: "I Can Not Read This Item," or "I Do Not Understand This Item." Students were instructed to leave blank any item they did understand or could read. These procedures were done for the purpose of determining interpretability and clarity of the DTBPS as perceived by students. Prior to the administration of the DTBPS, approval for soliciting help was given by the principal of the school. Consent forms, found in Appendix F, were signed by students before they participated.

In addition, each statement was read to the students by the researcher. The students also were instructed to circle any words they did not know. After the collection of the student responses, a tabulation of words circled and categories checked was made. Necessary revisions of the items and words were made for clarification of the scale. Items 6, 7, 12, 19, 22, 23, 24, 25, and 27 were revised.

On June 2, 1980, another visit was made to the same 20 students. This time they received the nine items that had been revised. They were instructed to read the revised items and check them according to words they did not know, items they could not read, and items they did not understand. Appendix G shows the list of nine items that the students received. After a tabulation of the items, no words were circled and no items were checked as not being understood or readable. Parallel forms for teachers and students were constructed by substituting either "My Physical Education Teacher,"

or "As A Physical Education Teacher, I" at the top of the page of the 30 items. Appendix H shows the two forms in their final forms.

Test-retest reliability. To determine stability of the newly constructed form for students, a subsequent test-retest reliability measure was performed on the DTBPS. The 30-item scale was given to two different high school physical education classes within the Greensboro City School System. Each class was instructed to fill out the front page of the 30-item scale and write their initials on the scale. When students did not know a word or needed clarification of an item, they were instructed to raise their hand and the researcher would go and explain the word or item individually.

During the pretest, one of the classes consisted of 22 pupils, while the other class consisted of 18 students. Three weeks following the first administration, the researcher went back to the same classes and administered the same scale. For the posttest, the first class had 16 students participating. Six students either were not present on the day of the posttest or filled out the rating scale incorrectly. A Pearson Product Moment Correlation technique yielded a .67 reliability coefficient for the 16 students participating.

On the posttest, the second class had 12 students participating. Six students either were not present for the posttest or filled out the rating forms incorrectly. A Pearson Product Moment Correlation was computed and yielded a .82 reliability coefficient for the 12 students participating.

Combining data from both classes yielded a .81 reliability coefficient. Table 3 provides a summary of the statistics from the pretesting and posttesting of the ratings by students.

Table 3
Summary Statistics of Test-Retest
Ratings by Students

Variable	Class	Cases	Mean	<u>SD</u>	Correlation
Pretest	1	16	64.44	6.653	
Posttest	1	16	69.44	5.138	.67
Pretest	2	12	55.75	7.450	
Posttest	2	12	62.00	7.410	.81
Pretest	1 & 2	28	60.71	8.146	
Posttest	1 & 2	28	66.25	7.147	.81

Item analysis. An item analysis was computed on the post scores of the 28 students in order to determine inter-item reliability. An item analysis determines the difficulty and discriminating power of each item. A Covariance Matrix by Statistical Package for Social Studies (SPSS) (Nie et al., 1970) was generated to determine the overall internal consistency of the scale. Output features from the University of North Carolina at Greensboro Academic Computer Center included item means, item variance, standard deviation, item correlations, and overall reliability of the scale. The overall reliability of the scale was .81. Table 4 includes

Table 4
Summary Statistics of Ratings by Students
Using an Item Analysis

Item Number	Mean	<u>SD</u>	Correlations
1	2.1786	.905	.548
2	1.7500	.800	.398
3	2.3571	.780	.208
4	2.6429	.559	.372
5	2.2142	.630	.425
6	2.4642	.744	.391
7	1.1071	.416	-.034
8	2.1429	.756	.270
9	2.5714	.741	.248
10	2.2142	.787	.095
11	2.3927	.567	.216
12	2.1429	.650	-.069
13	2.3571	.679	.343
14	2.0358	.838	.626
15	2.2500	.799	.623
16	1.6786	.612	-.013
17	1.3927	.567	.208
18	2.2142	.630	.017
19	2.2500	.745	.808
20	1.3929	.629	-.296

Table 4 (cont'd.)

Item Number	Mean	<u>SD</u>	Correlations
21	2.3571	.731	.280
22	2.5000	.745	.808
23	2.6776	.548	.373
24	2.4642	.576	.512
25	2.2857	.763	.452
26	2.1071	.786	.393
27	2.6429	.731	.195
28	2.4642	.693	.619
29	2.1429	.756	.295
30	2.7500	.518	.381

summary statistics for the 30 items computed from the responses of the 28 students.

After completion of Phase I, Phase II, and Phase III, the preliminary study was completed. The next part of the research consisted of the main study.

Procedures for Main Study

The study will be discussed in the following sequence: Subjects, Collection of Data, and Data Analysis.

Subjects

Four male physical education high school teachers and their classes and four female physical education high school teachers and their classes from the Greensboro City Schools were selected randomly to participate in the main study. Permission to ask for their participation was secured through the administrative offices of Greensboro City Schools. A letter, the proposal for the study, and an outline form prepared for the University of North Carolina at Greensboro was sent to the Greensboro City and Guilford County Schools administrative offices to obtain permission to administer the scales in the schools. This information can be found in Appendix I. Permission was granted in the Greensboro City Schools but was denied in the Guilford County Schools system due to the heavy work load of teachers.

All names of physical education teachers in the four high schools were put into an envelope on September 21, 1980. Names were secured from the Directory of the Greensboro Public Schools. Names were randomly selected from the envelope. The

teachers were contacted by telephone. The first four male physical education teachers and one of their classes and the first four female physical education teachers and one of their classes who agreed to participate in the study were used. The four female physical education teachers were from Grimsley, Smith, and Dudley High Schools, while the four male teachers were from Smith, Page, and Dudley High Schools. All the schools were located in Greensboro, North Carolina. Table 5 includes breakdown analysis of the subjects.

Table 5
Breakdown of Teachers and Students by Number, Sex,
School, and Activities at Four
Greensboro High Schools

Teacher	Sex	No. of Students	Males	Females	School	Activity
1	M	28	28	0	Smith	Weight- lifting
2	M	25	21	4	Dudley	Basketball
3	M	18	18	0	Smith	Weight- lifting
4	F	21	4	17	Smith	Gymnastics
5	F	18	2	16	Dudley	Volleyball
6	F	28	5	23	Smith	Tennis
7	F	36	14	22	Grimsley	Soccer
8	M	23	23	0	Page	Weight- lifting

Teachers were asked to select one class that had a large number of students of their own sex for the purpose of studying possible differences in perceptions of male and female students. Times were identified by the teacher and researcher for gathering the data during the weeks of September 22nd and 29th of 1980. A total of eight teachers and 197 students participated in the main study. A thank-you letter was sent to each teacher and class that participated. A copy of this letter can be found in Appendix J.

Collection of Data

Prior to the day set for gathering the data, each teacher was called by telephone to be reminded of the times when data would be collected. The administration of the rating scales was conducted at the beginning of the class period. The purpose of the study was discussed. An explanation of the consent form was given and filled out by the students and teachers. Before the scale was filled out, students were given a definition and example of the word, perceiving. Perceiving was defined as using the senses to observe interactions or transactions between an individual and the world or impressions people form of other people. For example, if a tall student were present, the researcher would comment that that particular student might be perceived as being on a basketball team. On the front page of the rating scale, data were requested pertaining to sex, school, and age. To insure further interpretability, students were instructed to raise their hands to request help if they did not understand

words or items. The administration of the rating scale took approximately 20 minutes with each class.

Data Analysis

The data collected in this study were nominal. They were used for the major portion of the main study for the statistical methods of Chi square goodness-of-fit test, Factor analysis, Multivariate Analysis of Variance (MANOVA), and Univariate Analysis of Variance. These procedures supplied the answers to the following questions:

1. Are there unique factors that account for a significant proportion of variance in student perceptions scores? The answer to this question was determined by performing, via the principal axis factor analysis on the data collected, the procedure of Statistical Analysis System (SAS) (Barr et al., 1976) at the University of North Carolina at Greensboro Computer Center.

2. Are there significant differences in the perceptions of teaching behaviors as perceived by high school students and their physical education teachers on item and factor scores? This question was answered by computing Chi square goodness of fit test programmed by SAS (Barr et al., 1976) on item scores. A MANOVA and Univariate Analysis of Variance were computed on factor scores using the program procedure of SAS. The .05 level of significance was selected to allow for the detection of differences in the groups.

3. Are there significant differences in the teaching behaviors of physical education teachers as perceived by

their male and female high school students on item and factor scores? This question was answered by computing a Chi square goodness of fit test programmed by SAS (Barr et al., 1976) on item scores. A MANOVA and Univariate Analysis of Variance was computed on factor scores using the program procedure of SAS. The .05 level of significance was selected to allow for the detection of differences in the groups.

CHAPTER IV
PRESENTATION, ANALYSIS, AND DISCUSSION
OF DATA

The purpose of the main study was to answer the following questions:

1. Are there unique factors that account for a significant proportion of variance in student perception scores?
2. Are there significant differences in the perceptions of teaching behaviors as perceived by high school students and their physical education teachers on item and factor scores?
3. Are there significant differences in the teaching behaviors of physical education teachers as perceived by their male and female high school students on item and factor analysis?

Participants in the main study were 197 students of high school age and 8 secondary physical education teachers. Subjects were members of eight different physical education classes located in four high schools in the Greensboro City School System. Students and teachers filled out parallel forms of the DTBPS. The rating instrument consisted of 30 items pertaining to perceptions of physical education teaching behaviors found in the secondary level. Students and teachers indicated the frequency of perceptions of teaching

behaviors on a rating scale labeled, "Never Perceived," "Sometimes Perceived," and "Often Perceived."

Questions one, two, and three will be used as a guide for the presentation, analysis, and discussion of data.

Are There Unique Factors that Account for a
Significant Proportion of Variance in
Student Perception Scores?

Descriptive Statistics

Means and standard deviations were computed on each item rated by the 197 participants. Item means and standard deviations are recorded in Table 6.

The students had an overall mean score of 2.24 and a .74 standard deviation for the 30 items. The lowest mean score was 1.58 for item 20 and highest mean score was 2.68 for items 4 and 30. The lowest standard deviation was .56 for item 28 and the highest standard deviation was .84 for item 2.

Factor Analysis

A factor analysis was performed on the data from the student ratings of the Daniel Teaching Behavior Perception Scale (DTBPS) to ascertain if there were unique factors that accounted for a significant proportion of variance in student perception scores of teacher behaviors exhibited in the physical education setting.

The ratings of the DTBPS were analyzed via principal axis factor analysis. Factor patterns were rotated orthogonally via the varimax procedure in order to obtain variable simplicity

Table 6
Means and Standard Deviations of the
Ratings of Students (N = 197)

Items	Means	<u>SD</u>
1	2.24	.77
2	1.87	.84
3	2.40	.72
4	2.68	.68
5	2.27	.73
6	2.41	.79
7	1.68	.83
8	2.07	.80
9	2.36	.83
10	2.18	.74
11	2.32	.70
12	1.98	.82
13	2.29	.76
14	1.92	.74
15	2.43	.82
16	1.87	.76
17	1.87	.82
18	2.10	.71
19	2.26	.71
20	1.58	.80
21	2.41	.73
22	2.38	.69
23	2.39	.70
24	2.45	.73
25	2.34	.72
26	2.19	.76
27	2.64	.64
28	2.71	.56
29	2.32	.77
30	2.68	.59

and the simplest factor structure (Guilford, 1967; Kerlinger, 1964). The varimax procedure yields factors that have large loadings on relatively few variables (Willemssen, 1974, p. 166). In order that an item could be retained within a particular factor, an item had to have a factor loading equal to or greater than .50. The general consensus is to use a cut-off value of .50 even though Willemssen (1974) cited a value of .33 as the minimum absolute value. Twenty-six items had values equal to or greater than .50 while four items, 11, 19, 22, and 29 failed to load significantly. These four items failed to have any common relationships with other statements.

Factor analysis of the DTBPS identified nine factors. Labels were given to the factors in relation to common meaning of the items found in the factors. The labeling of the nine factors were as follows:

Factor I	Strategies in Dealing with Student Behaviors
Factor II	Teacher and Student Cooperative Behaviors
Factor III	Instruction Oriented Behaviors
Factor IV	Encouragement of Individual Student Behaviors
Factor V	Democratic Teacher Behaviors
Factor VI	Nonverbal and Verbal Rewarding Behaviors
Factor VII	Learning Content Oriented Behaviors
Factor VIII	Initiation of Student Involvement Behaviors
Factor IX	Establishment of Warm and Cordial Environmental Behaviors

Table 7 lists the factors, the items under each statement, and the factor loading of each item.

Using Kaiser's criterion of 1.00 for eigenvalues, nine factors with eigenvalues greater than one attributed for 57% of the total variance. The principal-factor solution yields the first factor with the greatest proportion of common variance and succeeding factors accounted for the rest of the

Table 7
Factor Arrays of Varimax Rotation

Item	Loading	Statement
Factor I (Strategies in Dealing with Student Behaviors)		
23	.54	Deals comfortably with students that misbehave
24	.54	Deals comfortably with students who are outgoing
25	.75	Deals comfortably with students who are shy
26	.52	Is open to criticism and suggestions concerning teaching from the students
Factor II (Teacher and Student Cooperative Behaviors)		
7	.60	Lets the students keep their own records and charts during class
14	.54	Has students work individually
17	.69	Divides up skill levels within the class
Factor III (Instruction-Oriented Behaviors)		
12	.53	Shows the whole class something that a student has done wrong while practicing a motor skill
15	.60	Demonstrates the skills of an activity
21	.66	Encourages self-discipline
Factor IV (Encouragement of Individual Student Behaviors)		
10	-.60	Allows the students to make up their own activities
16	.62	Gives more individual attention than group or whole class attention
18	.60	Lets students work on their own without interrupting
8	.50	Lets students move around without their having to ask permission
Factor V (Democratic Teacher Behaviors)		
3	.59	Deals with discipline problems individually
9	.74	Lets the students voluntarily group themselves

Table 7 (cont'd.)

Item	Loading	Statement
Factor VI (Nonverbal and Verbal Rewarding Behaviors)		
1	.73	Gives compliments pertaining to class-work
2	.60	Gives compliments pertaining to personal appearance
20	.61	Rewards students by giving materials, such as certificates, points, badges, etc.
Factor VII (Learning Content Oriented Behaviors)		
4	.61	Gives directions during a given lesson
5	.56	Asks questions during a given lesson
28	.54	Explains the skills of an activity
Factor VIII (Initiation of Student Involvement Behaviors)		
6	.72	Encourages students to speak and perform during class
13	.54	Asks students to help each other out in various activities
27	.50	Answers requests and questions asked by students
Factor IX (Establishment of Warm and Cordial Environmental Behaviors)		
30	.73	Laughs and smiles

common variance. Factor I accounted for the most variance, 18.4% while Factor IX accounted for the least variance, 3.4%. Table 8 shows the results of the eigenvalues, the percentage of variance accounted for by each factor, and the cumulative percentage of variance described by the factors.

Factor Profiles

The following information is reported for each factor: (a) description of factors, (b) number of statements with a factor loading of $\geq .5$, (c) eigenvalues, (d) proportion of variance, and (e) contribution to the total percentage of variance.

Factor I described behaviors that related to strategies that teachers used in dealing with students' social behaviors found in the physical education setting. There were four items in this factor, which had an eigenvalue of 5.51 and accounted for the greatest proportion of variability of all the items (18.4%).

Factor II described cooperative behaviors between students and teachers. Three items comprised this factor, which had an eigenvalue of 2.48 and accounted for 8.3% of the total variability of all the items. This factor plus the first factor accounted for 26.6% of the cumulative percentage of variability.

Factor III described behaviors that are used for the purpose of instructions, such as correcting students, demonstrating activities, and encouraging self-discipline in students. There were three items in this factor, which

Table 8
Eigenvalues, Percentage of Variance, and
Cumulative Percentages of Variance for
the Rotated Factors Using
Student Scores ($N = 197$)

Factor	Eigenvalue	Percentage of Variance	Cumulative Percentage
I	5.51	18.4	18.4
II	2.48	8.3	26.7
III	1.75	5.8	32.5
IV	1.47	4.9	37.4
V	1.32	4.4	41.8
VI	1.27	4.2	46.0
VII	1.14	3.8	49.8
VIII	1.08	3.6	53.4
IX	1.02	3.4	56.8

had an eigenvalue of 1.75 and accounted for 5.8% of the total variability of all the items. This factor plus the first two factors accounted for 32.5% of the cumulative percentage of variability.

Factor IV described behaviors of teachers that promote individualism in students. There were four items in this factor, which is known as a bipolar factor because of the positive and negative loadings of its items. The first item measures negatively what the other items measure positively. This factor had an eigenvalue of 1.47 and accounted for 4.9% of the total variability of all the items. This factor plus the first three factors accounted for 37.4% of the cumulative percentage of variability.

Factor V described democratic teacher behaviors. Two items compromised this factor, which had an eigenvalue of 1.32 and accounted for 4.4% of the total variability of all the items. This factor plus the first four factors accounted for 41.8% of the cumulative percentage of variability.

Factor VI described behaviors of teachers that are related to rewarding students. Containing three items, this factor had an eigenvalue of 1.27 and accounted for 4.2% of the total variability of all the items. This factor plus the first five factors accounted for 46% of the cumulative percentage of variability.

Factor VII described behaviors that emphasize the learning of content. Three items were found in this factor, which had an eigenvalue of 1.14 and accounted for 3.8% of

the total variability of all the items. This factor plus the first six factors accounted for 49.8% of the cumulative percentage of variability.

Factor VIII described teacher behaviors that encourage student involvement. This factor, composed of three items had an eigenvalue of 1.08 and accounted for 3.6% of the total variability of all the items. This factor plus the first seven factors accounted for 53.4% of the cumulative percentage of variability.

Factor IX described teacher behaviors that permit a warm and cordial environment. With only one item, this factor had an eigenvalue of 1.02 and accounted for 3.4% of the total variability of all the items. This factor plus the other eight factors accounted for 56.8% of the cumulative percentage of variability.

Discussion

Factor I (Strategies of Dealing with Student Behaviors) of the DTBPS accounted for the most variance of the nine factors. In a review of several classroom factor-analytic studies, similar factor structures were found. For example, from the study of Emmer and Peck (1973), a factor was found to be similar to Factor I of the DTBPS. This factor pertained to teacher-controlling behavior. They felt that this factor is present when teachers allow students to present information and opinions as opposed to when students are allowed to be engaged in routine class activities. This may be due to the fact that the structure of physical activities and games

helps to control student behaviors. Therefore, if students are involved in physical activity for the majority of the instructional time, they may show little attention to their social behaviors and more attention to skill attainment.

Several other factor-analytic studies which had similar factor structure to Factor I of the DTBPS are as follows: Beck (1967), disciplinary merit; Coats, Swierenga, and Wickert (1972), student centered; Coffman (1954), empathy; Doyle and Whitely (1976), tolerance of other viewpoints; Gage, Leavitt, and Stone (1955), effectiveness in promoting emotional adjustment; and Veldman and Peck (1963), strict control. Therefore, it appears from the results of the factor analysis in this study that behaviors related to strategies for dealing with students' behaviors are also present in other instructional settings. Student perceptions of teaching behaviors that are used to control or modify behaviors may be influential in the learning process or an obstruction of the learning process. It appears, therefore, that these behaviors may need to be of major consideration in the teaching of method courses for all teaching disciplines, especially physical education.

Factor II (Teacher and Student Cooperative Behaviors) consisted of three items, "lets the students keep their own records and charts during class," "has students work individually," and "divides up skill levels within the class." Behaviors found in this factor demonstrate the teacher's willingness to allow students to work more on their own. When teachers and students share in learning processes such

as keeping their own records and charts, students are more apt to accomplish objectives.

In a study by Bookhout (1967) of ninth grade physical education students, a factor labeled "Integrative Interactions" was found to closely resemble Factor II of the DTBPS. Some of the items found in the factor identified by Bookhout were similar to Factor II of the DTBPS: directs large quantity of teaching behavior toward pupil, small group, or entire class, often allows planning, directs large quantity of teaching behavior toward pupil, and often allows leadership.

Factor III (Instructional-Oriented Behaviors) which consisted of three items, "shows the whole class something that a student has done wrong while practicing a motor skill," "demonstrates the skills of an activity," and "encourages self-discipline," reflects teaching behaviors of physical education teachers that are geared more toward the instruction of physical activity than the managing of classroom behaviors. The items "shows the whole class something that a student has done wrong while practicing a motor skill," and "demonstrates the skills of an activity," could be perceived as behaviors meant to restrain student behaviors because the teacher is the center of attention. The item, "demonstrates skills of an activity," may be perceived as being unique to the physical education setting because not many teachers use demonstrations as one of the main methods of getting subject matter across to their students. In Bookhout's study (1967), a factor similar to this item was labeled as "Skill Perfection."

In addition, similar factors to Factor III were also found in classroom studies by Coats, Swierenga, and Wickert (1972), structure-centered; Doyle and Whitely (1976), expository skills; and Emmer and Peck (1973), divergent versus convergent evaluative teacher behavior.

Factor IV (Encouragement of Individual Student Behaviors) consisted of four items, "allows the students to make up their own activities," "gives more individual attention than group or whole class attention," "lets students work on their own without interrupting," and "lets students move around without their having to ask permission." This factor indicated that the teachers' behavior allowed students to make up their own activities and work independently without interruption. When teachers give students individual attention rather than treating them as a whole class, students interact on an individual basis with the teachers. This interaction allows teachers to get to know individual students and their problems, aspirations, likes, and dislikes. This might also indicate that the physical educators encouraged individual responses because of their philosophical position toward humanistic instruction.

Factor V (Democratic Teacher Behaviors) consisted of two items, "deals with discipline problems individually" and "lets the students voluntarily group themselves." This factor describes teaching behaviors that deal with students in a democratic manner instead of an authoritative manner. Only one other classroom study (Veldman & Peck, 1963), had

democratic teaching behaviors standing alone as an independent factor. Veldman and Peck's study labeled their factor "Democratic Procedure." While most teachers try to exhibit democratic behaviors in the classroom and physical education setting, it may be that students do not perceive them as doing this. Historically, there has been a tendency for physical education teachers to be perceived as authoritative figures. It has been only within the last decade that teachers have become aware of their use of teaching styles. Feedback and intervention methods offered to teachers have helped them to use more democratic behaviors in the physical education setting (Siedentop, 1976).

Factor VI (Nonverbal and Verbal Rewarding Behaviors) consisted of three items, "gives compliments pertaining to classwork," "gives compliments pertaining to personal appearance," and "rewards students by giving materials, such as certificates, points, badges, etc." This factor consisted of behaviors that relate to rewarding students by social interaction or materially. Rewarding students is a form of motivation intended to keep students interested in their classwork and themselves. A classroom study by Isaacson, McKeachie, Hilholland, Lin, Hofeller, Baerwaldt, and Zinn (1964) found a factor similar to Factor VI of the DTBPS. It consisted of items such as, "He told students when they had done a particularly good job," and "He complimented students in front of others." "He criticized poor work" was one of the few items associated with this factor that

had a negative connotation. Unlike that factor, Factor VI of the DTBPS consisted of all positive comments.

Factor VII (Learning Content Oriented Behaviors) consisted of three items, "gives directions during a given lesson," "asks questions during a given lesson," and "explains the skills of an activity." These behaviors are seen as processes for obtaining knowledge of the subject matter. Giving directions, asking questions, and explaining the skills of an activity could act as restraining behaviors used by teachers to keep the students on track.

Studies that have yielded factors and items similar to Factor VII were as follows: Beck (1967), cognitive merit; Doyle and Whitely (1974), expository skills; and Emmer and Peck (1973), teacher openness. It would, therefore, seem that teaching behaviors related to learning content would be indicative of an increased emphasis on "accountability" and current emphasis on "getting back to basics."

Factor VIII (Initiation of Student Involvement Behaviors) consisted of three items, "encourages students to speak and perform during class," "asks students to help each other out in various activities," and "answers requests and questions asked by students." Teacher behaviors that encourage student involvement would appear to be important in physical education settings in order to get students actively involved in the teaching-learning process. These types of behaviors facilitate interest and prevent boredom in the learning environment.

Other researchers who have reported factors similar to Factor VIII of the DTBPS included Beck (1967), Doyle and Whitely (1974), Grasha (1975), and Paraskevopoulos (1968). For example, Paraskevopoulos (1968) reported a factor which appeared to be very similar to Factor VIII of the DTBPS (teacher behavior encouraging student participation and initiative). Therefore, Factor VIII appears to be a viable factor in a number of instructional settings.

Factor IX (Establishment of Warm and Cordial Environmental Behaviors) consisted of one item, "laughs and smiles." These behaviors exhibited by teachers establish a climate that makes students feel comfortable in the physical education setting. Factors similar to Factor IX were found in five other classroom studies and are as follows: Beck (1967), affective merit; Doyle and Whitely (1974, 1976), attitude toward students; Haslett (1976), communicative style; and Veldman and Peck (1963), friendly, cheerful, and admired. The findings from these studies appear to indicate that teaching behaviors that establish a comfortable climate for learning could be important for enhancing learning.

Summary

Doyle and Whitely (1976) purported that a few basic factors may be used to describe teaching, rather than single behaviors or characteristics (Doyle & Whitely, 1976, p. 241). In other words there are certain stable dimensions of teaching as perceived by students.

The similarities found among the factors of the other studies and factors of the DTBPS attest to the usefulness of the factor analysis for describing teaching behaviors in the physical education settings and across other instructional settings. These factors may be useful in teacher preparation classes for the purpose of studying teacher behavior analysis. Future checklists and rating scales for physical education teachers may evolve from these factors.

The previous findings appear to support the first question of the main study. There are unique factors that account for a significant proportion of variance in student perception scores.

Are There Significant Differences in the Perceptions
of Teaching Behaviors as Perceived by High School
Students and Their Physical Education Teachers
on Item and Factor Scores?

A Chi square goodness-of-fit test was computed to determine group differences on each of the items. A multivariate analysis of variance (MANOVA) was also computed on factor scores to see if there were between-group differences on the dependent variables of teachers' perceptions and students' perceptions.

Chi Square

The Chi square goodness-of-fit test was applied to the 30-item scores of the DTBPS to determine whether there were significant differences between teachers and students concerning perceptions of teaching behaviors. The Chi square values

were obtained by using the computer program procedure of SAS. Items 1, 3, 7, 12, 14, 17, and 19 of the 30 items were significant at the .05 level. These items will be discussed now.

There was a significant difference between the perception of teachers and students for Item 1 (Gives Compliments Pertaining to Classwork). Approximately 8% of the students perceived their teachers as never giving compliments pertaining to their classwork in the physical education setting, while none of the teachers rated themselves in this category. Only 42% of the students perceived their teachers as often giving compliments pertaining to their classwork in comparison to over 87% of the teachers who rated themselves in this category. In comparing the category of "Sometimes Perceived," approximately 49% of the students rated their teachers in this category, while only 12.5% of the teachers rated themselves in this way. A summary of the Chi square analysis can be found in Table 9.

There was a significant difference between the perceptions of teachers and students for Item 3 (Deals with Discipline Problems Individually). All teachers in this study perceived themselves as dealing often with discipline problems on an individual basis, while only 52% of the students perceived their teachers the same way. Approximately 9% of the students reported that they had never perceived their teachers dealing with discipline problems on an individual basis. Approximately 39% of the students reported that they sometimes perceived their teachers dealing with discipline problems. A summary

of the Chi square analysis can be found in Table 10.

Table 9
Chi Square for Item 1 (Gives Compliments
Pertaining to Classwork)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Teachers	87.50%	12.50%	0.00%	6.391*
Students	42.33%	49.21%	8.45%	

* $p \leq .05$

Table 10
Chi Square for Item 3 (Deals with
Discipline Problems Individually)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Teachers	100.00%	0.00%	0.00%	7.103*
Students	52.05%	38.66%	9.28%	

* $p \leq .05$

Item 7 (Lets the Students Keep Their Own Records and Charts during class) yielded a significant difference between the perceptions of teachers and students. Twenty-three percent of the students perceived that their teacher often let them keep their own records and charts during class, while approximately 12% of the students perceived this behavior

as often occurring. Twenty-two percent of the students perceived that their teachers sometimes let them keep their own records and charts during class, while 75% of the teachers rated themselves in this category. Over half of the students (55.10%) rated that their teachers never let them keep records and charts during class while only 12.50% of the teachers rated themselves this way. A summary of Chi square analysis can be found in Table 11.

Table 11

Chi Square for Item 7 (Lets the Students Keep
Their Own Records and Charts During Class)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Teachers	12.50%	75.00%	12.50%	11.993 *
Students	22.96%	21.94%	55.10%	

* $p \leq .05$

There was a significant difference between the perceptions of teachers and students for Item 12 (Shows the Whole Class Something that a Student Has Done Wrong While Practicing Physical Education Activities). None of the teachers perceived themselves as often showing the whole class something that a student had done wrong while practicing physical activities, while 87% of the teachers perceived themselves as sometimes doing this. Students (30.77%) and teachers (12.50%)

were closest in the ratings of never perceiving the teacher as showing the whole class something that a student had done wrong while practicing physical activities. This was one of the few items in which students' ratings were equally distributed within all three categories. A summary of Chi square analysis can be found in Table 12.

Table 12

Chi Square for Item 12 (Shows the Whole Class
Something that a Student Has Done Wrong
While Practicing Physical Activities)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Teachers	0.00%	87.50%	12.50%	8.489 *
Students	32.31%	36.92%	30.77%	

* $p \leq .05$

The perceptions of teachers and students for Item 14 (Has Students Work Individually) was found to be significantly different. There were major discrepancies in all categories between students and teachers. The largest discrepancy was found in the category of "Often Perceived," with only 22.56% of students and 75.00% of the teachers rating this item. Students (48.72%) as compared to teachers (25.00%) rated students sometimes as working individually. None of the teachers rated themselves as never being perceived as having students work individually, while 28% of the students rated

their teachers in this category. A summary of Chi square analysis can be found in Table 13.

Table 13
Chi Square for Item 14 (Has Students
Work Individually)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Teachers	75.00%	25.00%	0.00%	11.781*
Students	22.56%	48.72%	28.72%	

* $p \leq .05$

Item 17 (Divides Up Skill Levels Within the Class) yielded significant difference between the perceptions of teachers and students. There were only two major discrepancies in the categories of "Often Perceived," and "Sometimes Perceived." Seventy-five percent of the teachers perceived themselves as often dividing up skill levels within the class while only 26.29% of the students rated their teachers in this category. No teachers perceived themselves as sometimes dividing up skill levels within the class while 37.11% of the students perceived their teacher as sometimes dividing up skill levels within the class. The category of "Never Perceived" only deviated 11% in agreement between students and teachers. A summary of Chi square analysis can be found in Table 14.

There was a significant difference between the perceptions of teachers and students for Item 19 (Rewards Students with

Words and Actions).

Table 14
Chi Square for Item 17 (Divides up Skill
Levels Within the Class)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Teachers	75.00%	0.00%	25.00%	9.716 *
Students	26.29%	37.11%	36.60%	

* $p \leq .05$

All teachers perceived themselves as often rewarding students with words and actions, while 40.82% of the students perceived their teacher as often doing this. None of the teachers perceived themselves as sometimes rewarding students with words and actions while almost 50% of the students perceived their teachers as sometimes rewarding students with words and actions. None of the teachers perceived themselves as never rewarding students with words and actions while a relatively small percentage (13.78%) of students felt that their teacher never rewarded them with words and actions. A summary of Chi square analysis can be found in Table 15.

Discussion

This study complements other studies that have found significant differences between the perceptions of physical education teaching and coaching behaviors by students, teachers, athletes, coaches, and outside classroom observers (Bailey,

1972; Curtin, 1977; Edwards, 1973; Esposito, 1975; Grastorf, 1980; Larson, 1973; Short, 1976; Stallard, 1974; Sweeting, 1972.

Table 15
Chi Square for Item 19 (Rewards Students
with Words and Actions)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Teachers	100.00%	0.00%	0.00%	10.976 *
Students	40.82%	45.41%	13.78%	

* $p \leq .05$

The results of the Chi square analyses performed on the DTBPS support the previous finding by Sweeting (1972) that teachers perceived themselves more favorably than students. This was found to be true on all seven items of the DTBPS in which there was a significant difference. With the exception of Item 19, the remaining six items were found in the factor analysis. The finding concerning the ratings by teachers concurs with those of Freeman (1962), Hall and Myers (1977), and Horrocks (1964) who found that individuals rate themselves favorably on traits and characteristics deemed worthwhile. This may be one explanation of why teachers rated themselves higher than the students. Holzback (1978) also claimed that self-raters tend to be more lenient on themselves than superiors or peers.

Brophy and Good (1974) surmised that, due to the fast pace of classroom life, teachers are unaware of their patterns of interaction with students. The fast pace of classroom life makes it difficult for the teachers to monitor their behaviors toward students. These assumptions and the work of Freeman (1962), Hall and Myers (1977), Holzback (1978), and Horrocks (1964) may help to explain why there were discrepancies in ratings by teachers and students.

With the exception of Item 12 (Shows the Whole Class Something that a Student Has Done Wrong While Practicing Physical Activities), the other six items were positive types of behaviors that most teachers would want to be perceived as using. It should also be noted that Item 12 was the only item in which no teachers rated themselves in the "Often Perceived" category. The lack of rating in this category may have been because of a possible negative connotation associated with the use of students to demonstrate incorrect ways of practicing physical activities. There were two items of the seven in which all teachers rated themselves in the "Often Perceived" category. These were Item 3 (Deals with Discipline Problems Individually) and Item 19 (Rewards Students with Words and Actions). Again, teachers may have rated themselves so highly on these two items due to the inherent goodness of the behaviors. On a whole, on all seven items, teachers rated themselves higher on the desirable response categories than students did.

Some of the reasons pupils may have rated their teacher lower on perceptions of teaching behavior in comparison to teachers' ratings could be due to their lack of awareness of behaviors exhibited by teachers. This may be due to the fact that students may be preoccupied with obtaining subject matter or engaging in peer interaction.

Another reason for discrepancies in the ratings between teachers and students may have been due to the "halo effect." The "halo effect" occurs when the ratee is judged by a pervasive good or bad impression, regardless of the actual behavior of the ratee. In this case, students may have been affected by the "halo effect" when they were rating their teacher.

The findings of this study do not suggest that perceptions of students are to be considered more valid than perceptions of teachers, but that discrepancies of perceptions between teachers and students should be taken into consideration by teachers when planning for effective instructional strategies. The results of this study indicated that there were significant differences in perceptions of teaching behaviors on 7 of the 30 items based upon item scores using a Chi square goodness-of-fit test. No differences were found in the remaining 23 items and this may have been due to statistical error or to interpretability of the items. These results answered part 1 of Questions of the main study.

Multivariate Analysis of Variance of Factor Scores

A multivariate analysis of variance was performed on the nine factors of the DTBPS using the computer program procedure of SAS (Barr et al., 1976). The analysis was used to determine whether differences existed between the teacher and student groups on the nine factors which acted as dependent variables. A nonsignificant multivariate $F(9, 195) = 1.64$, $p \leq .05$) indicated that there was not a significant difference between teacher and student groups on factor scores. As a result of nonsignificant difference it was inappropriate to discuss each univariate analysis separately. Though there was no significant difference, it is important to note, however, that all the means for teachers were higher than for students, especially for Factor II (Teacher and Student Cooperative Behaviors) and Factor VI (Nonverbal and Verbal Rewarding Behaviors). The higher means for the teachers did indicate a trend in teachers rating themselves higher than students. The multivariate analyses answered part 2 of Question 2 of the main study.

Are There Significant Differences in the Teaching Behaviors of Physical Education Teachers as Perceived by Their Male and Female High School Students on Item and Factor Scores?

A Chi square goodness-of-fit test was computed to determine differences on each of the items. A multivariate

Table 16
Means of Students' and Teachers' Factor Scores

Factor	Description	Students' Means	Teachers' Means
I	Strategies in Dealing with Student Behaviors	9.36	10.38
II	Teacher and Student Cooperative Behaviors	5.47	7.00
III	Instruction Oriented Behaviors	6.82	7.50
IV	Encouragement of Individual Student Behaviors	8.21	9.63
V	Democratic Teacher Behaviors	4.76	5.75
VI	Nonverbal and Verbal Rewarding Behaviors	5.70	7.25
VII	Learning and Content Oriented Behaviors	7.70	8.38
VIII	Initiation of Student Involvement Behaviors	7.33	8.38
IX	Establishment of Warm and Cordial Environmental Behaviors	2.68	2.88

analysis of variance (MANOVA) was also computed on factor scores to see if there were between-group differences on the dependent variables of male and female students' perceptions.

Chi Square

The Chi square goodness of fit test was applied to the 30-item scores of the DTBPS to determine whether there were significant differences between male and female students' perceptions of teaching behaviors. Items 2, 7, 8, 17, 20, and 21 of the 30 items were significant at the .05 level. These items will be discussed below.

There was a significant difference between the perceptions of male and female students for Item 2 (Gives Compliments pertaining to Personal Appearances). Fifty-five percent of the female students perceived their teachers as never giving compliments pertaining to personal appearance, while 23.93% of the male students rated their teacher in this category. In comparing the category of "Sometimes Perceived," approximately 27% of the females rated their teacher in this category, while 37.61% of the males rated their teacher this way. Only 17.65% of the females perceived their teachers as often giving compliments pertaining to personal appearance in comparison to 38.46% of the males. A summary of the Chi square analysis can be found in Table 17.

Item 7 (Lets the Students Keep Their Own Records and Charts During Class) yielded a significant difference between the perceptions of female and male students. Twelve percent of the females perceived that their teacher often lets the

students keep their own records and charts during class while approximately 24% of the males perceived this behavior as often occurring.

Table 17
Chi Square for Item 2 (Gives Compliments
Pertaining to Personal Appearances)

Status	Oten Perceived	Sometimes Perceived	Never Perceived	Chi Square
Females	17.65%	27.06%	55.29%	21.875 *
Males	38.46%	37.61%	23.93%	

* $p \leq .05$

Eighteen percent of the females sometimes perceived this behavior, while 32% of the males rated them this same way. Over half of the females (62.24%) and half of the males (53.21%) indicated that their teacher never lets them keep their own records and charts. A summary of the Chi square analysis can be found in Table 18.

The perceptions of male and female students for Item 8 (Lets Students Move around Without Them Having to Ask Permission) were found to be significantly different. Thirty-eight percent of the females responded as "Often Perceived," while a similar number of males (33.90%) also often perceived their teacher the same way. In comparing the category of "Sometimes Perceived," 29.07% of the females rated their

teacher this way.

Table 18

Chi Square for Item 7 (Lets the Students Keep
Their Own Records and Charts During Class)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Females	12.94%	18.82%	68.24%	13.580*
Males	23.91%	32.65%	53.21%	

* $p \leq .05$

Thirty-two percent of the females perceived their teacher as never letting the students move around without their having to ask permission while 21.19% of the males rated their teacher in this category. A summary of the Chi square analysis can be found in Table 19.

Table 19

Chi Square for Item 8 (Lets Students Move Around
Without Their Having to Ask Permission)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Females	38.37%	29.07%	32.56%	6.021*
Males	33.00%	44.92%	21.19%	

* $p \leq .05$

There was a significant difference between the perceptions of male and female students for Item 17 (Divides Up Skill Levels Within the Class). Twenty-two percent of the females perceived that their teacher often divides up skill levels within the class while thirty-two percent of the males perceived their teacher the same way. Twenty-nine percent of the females as compared to 40% of the males rated teachers as sometimes dividing up skill levels within the class. The category of "Never Perceived" deviated 15% in agreement between males and females. A summary of the Chi square analysis can be found in Table 20.

Table 20
Chi Square for Item 17 (Divides Up Skill
Levels Within the Class)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Females	22.35%	29.41%	48.24%	9.330 *
Males	32.48%	40.17%	27.35%	

* $p \leq .05$

Item 20 (Rewards Students by Giving Materials, such as Certificates, Points, Badges, etc.) yielded a significant difference between the perceptions of female and male students. More males (20.34%) in comparison to females (16.47%) perceived their teacher as often rewarding them by giving materials, such as certificates, points, badges, etc. Approximately

11.76% of the females perceived that their teacher sometimes rewarded them, while 31.36% of the males rated their teacher this way. Females (71.76%) and males (48.31%) had the greatest difference in their ratings of "Never Perceiving." A summary of the Chi square analysis can be found in Table 21.

Table 21

Chi Square for Item 20 (Rewards Students by Giving
Materials, Such as Certificates,
Points, Badges, etc.)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Females	16.47%	11.76%	71.76%	13.264*
Males	20.34%	31.36%	48.31%	

* $p \leq .05$

The perceptions of male and female students for Item 21 (Encourages Self-Discipline) were found to be significantly different. Forty-three percent of the females perceived that their teacher often encourages self-discipline, while 62.71% of the males perceived this behavior as often occurring. Females (48.19%) as compared to males (29.66%) rated teachers as "Sometimes." The category of "Never Perceived" only deviated 1% in agreement between females and males. A summary of Chi square analysis can be found in Table 22.

Table 22
Chi Square for Item 21 (Encourages
Self-Discipline)

Status	Often Perceived	Sometimes Perceived	Never Perceived	Chi Square
Females	43.37%	48.19%	8.43%	7.854 *
Males	62.71%	29.66%	7.63%	

* $p \leq .05$

Discussion

Goebel and Cashen (1979) reported conflicting results regarding students' ratings of teachers. The Chi square analysis performed on the DTBPS supported the previous findings that male and female students' perceptions of teachers are different on several dimensions. Six items of the DTBPS were found to have significant differences of perceptions of teaching behavior between male and female students. These items were also found in the factor analysis. Items 7 and 14 were found to be significant in the Chi square analysis performed on data from students and teachers. All six items showed male students rating teachers higher on desirable response categories than female students.

The higher ratings by male students were particularly evident in Item 20. In the "Never Perceived" category there was a 23% difference in ratings by male and female students. This was the second largest discrepancy found in the response

categories of the six items. Almost three-fourths (75%) of the females rated that they never received material rewards from their teacher, while less than half (48%) of the males rated their teacher this same way. From the ratings, male students perceived their teacher rewarding them more than female students. The rate of rewarding students may have been based on accomplishment of tasks, thus indicating that male students may accomplish more tasks in the physical education setting than females.

Male students may have rated their teacher higher on all six items because it has been found that males are more positive in ratings than females. Men also have a tendency to over-rate members of their own sex (Horrocks, 1964, p. 590). In this study, male teachers were rated mostly by male students, while female teachers were rated mostly by female students. This analysis can be found in Table 5. The male students involved in this study rated their male teachers more positively than female students rated their female teachers.

Another reason for male students having higher ratings of their teacher may be because males interact more than females in the physical education setting (Allard, 1979; Brown, 1980; Griffin, 1980). In the classroom setting, Brophy and Good (1974) also found that males were the target of more praise and criticism than females. This interaction may cause males to be treated differently by their teachers in respect to participation, skill expectation, and verbal and nonverbal

behaviors. In summary, since discrepancies did occur in six items, these teachers should take into consideration their behavior toward male and female students in order to attain objectives. Discrepancies in perceptions between students and teachers could hinder teachers from obtaining objectives. This study could be viewed as an initial step in studying difference of teaching behavior toward male and female students. No differences were found in 24 items and this may have been due to statistical error or to interpretability of the items. These results answered part 1 of Question 3 of the main study.

Multivariate Analysis of Variance and Facotr Scores

A multivariate analysis of variance of the nine factors of the DTBPS, which acted as nine dependent variables, was performed. The analysis was used to determine whether differences existed between female and male students in their perceptions of the teachers' behavior in the physical education setting. The multivariate analysis of variance revealed a significant multivariate F for male and female students, $F(9, 187) = 2.42$, $p < .01$. A significant univariate $F(1, 195) = 11.83$, $p < .001$ was found for Factor II. The mean for male students was 5.82 and it was 4.98 for females. A significant univariate $F(1, 195) = 14.66$, $p < .01$ was also found for Factor VI. The mean for male students was 6.09 and 5.15 for females. Table 22 shows the means of the nine factors of the DTBPS for male and female perceptions.

Table 23
Male and Female Students' Factor Scores

Factors	Description	Female Means	Male Means
I	Strategies in Dealing with Student Behaviors	9.28	9.41
II	Teacher and Student Cooperative Behaviors	4.98	5.82
III	Instruction Oriented Behaviors	6.56	7.01
IV	Encouragement of Individual Student Behaviors	7.95	8.40
V	Democratic Teacher Behaviors	4.78	4.74
VI	Nonverbal and Verbal Rewarding Behaviors	5.15	6.09
VII	Learning and Content Oriented Behaviors	7.67	7.65
VIII	Initiation of Student Involvement Behaviors	7.28	7.37
IX	Establishment of Warm and Cordial Environmental Behaviors	2.68	2.67

Discussion

Univariate analyses of the factor scores of the DTBPS yielded two factors which differed significantly between male and female students. Factor II (Teacher and Student Cooperative Behaviors) and Factor VI (Nonverbal and Verbal Rewarding Behaviors) yielded significantly higher means for male students than for female students. It should also be noted that Items 7 and 17 of Factor II were found to be significant in the Chi square goodness-of-fit test between male and female students with males having higher mean scores than females.

Differences in perceptions of Factor II may have existed due to the possibility that male students may actually participate more in the physical education setting than female students (Allard, 1979; Brown, 1980; Griffin, 1980). This may allow for teachers and students to interact and have more contact with each other. These findings appear to support Horrocks' (1964) contention that males give more positive ratings than females. One final premise concerning the higher ratings by males on Factor II may be that the physical education setting allows male students and their teacher to exhibit more cooperative behaviors than between female students and their teacher. This difference may be due to psychological, physiological, or sociological circumstances such as the tendency for males to show off in gym in front of females or some females being inhibited about body

development, thus restraining some from full participation in physical activities.

Differences in perceptions of teaching behavior were found to exist between male and female students in Factor VI. Again, males had higher means than female students concerning teaching behaviors related to the giving of nonverbal and verbal rewards. Factor VI also had two items (Gives Compliments Pertaining to Personal Appearance and Rewards Students by Giving Materials Such as Certificates, Points, Badges, etc.) which were found to be significant in the Chi square goodness-of-fit test.

Allard (1979) found that though male students received more criticism, they also received more praise than female students. Therefore, the frequency of rewards may be due to males interacting more in the physical education setting, thus facilitating more opportunity for teachers to distribute these behaviors. On the other hand, the higher ratings by males may be because male students actually perform better in the physical education setting; therefore, they receive more nonverbal and verbal rewards.

The results concerning these two factors support the thesis that male students receive a higher frequency of positive teaching behaviors than females. These results answered part 2 of Question 3 of the main study.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to determine the reliability and validity of an instrument for gathering perceptions of physical education teaching behaviors. A subsequent purpose of this study was to describe differences of perceptions of teaching behaviors within secondary physical education classes as perceived by teachers and students. Literature reviewed included (a) theoretical considerations in behavioral perceptions, (b) behavioral assessment in education, and (c) behavioral assessment in physical education.

Within the study, answers were sought for four questions which focused on a set of selected teaching behaviors which were perceived by students and their respective physical education teachers. The preliminary study answered question 1.

1. Is the Daniel Teaching Behavior Perception Scale a valid and reliable instrument for measuring perceptions of behaviors of high school students and teachers?

The main study was designed to answer the following questions:

2. Are there unique factors that account for a significant proportion of variance in student perception scores?

3. Are there significant differences in the perceptions of teaching behaviors as perceived by high school students and their physical education teachers on item and factor scores?

Four male physical education high school teachers and their classes and four female physical education high school teachers and their classes from the Greensboro City Schools were randomly selected to participate in the main study. A total of 197 students participated in the main study.

Teachers and students participating in the study completed the Daniel Teacher Behavior Perception Scale (DTBPS) during the first part of physical education classes. The DTBPS was developed by the investigator during a preliminary study. The rating scale lists 30 teaching behaviors found in the physical education setting. Two forms of the DTBPS were constructed, one for students and the other for teachers.

The data collected from the DTBPS were nominal in nature; therefore, analysis included a principal axis factor analysis, Chi square goodness-of-fit tests, and a Multivariant Analysis of Variance (MANOVA). The results of the data analyses are summarized as follows:

1. There were nine factors that accounted for a significant proportion of variance in student perception scores. The behaviors included Factor I (Strategies in Dealing with Student Behaviors), Factor II (Teacher and Student Cooperative Behaviors), Factor III (Instructional Oriented Behaviors), Factor IV (Encouragement of Individualism), Factor V (Democratic Teacher Behaviors), Factor VI (Nonverbal and Verbal Rewarding Behaviors), Factor VII (Learning Content Oriented Behaviors), Factor VIII (Initiation of Student Involvement Behaviors), and Factor IX (Establishment of Warm and Cordial

Environmental Behaviors).

2. There were differences in the perceptions of teaching behaviors as perceived by high school students and teachers on item scores. Seven items (1, 3, 7, 12, 14, 17, 19) were significant at the .05 level. There were no significant differences in the factor scores of teaching behaviors as perceived by high school students and teachers.

3. There were significant differences in the teaching behaviors of physical education teachers as perceived by their male and female high school students on item scores. Six items were significant at the .05 level. There were significant differences on Factors II and VI at the .05 level as perceived by their male and female high school students.

Conclusions

Within the limits of this exploratory study, the following conclusions are warranted:

1. The DTBPS proved to be a reliable and valid tool for assessing perceptions of teaching behaviors by students.

2. There were nine factors that accounted for a significant proportion of variance in student perceptions' scores.

3. There were significant differences in the perceptions of teaching behaviors as perceived by high school students and teachers on item scores 1 (Gives Compliments Pertaining to Classwork), 3 (Deals with Discipline Problems Individually), 7 (Lets the Students Keep Their Own Records in Relation to Objectives), 12 (Shows the Whole Class Something that a

Student Has Done Wrong While Practicing a Motor Skill), 14 (Has Students Work Individually), 17 (Divides Up Skill Levels within the Class), and 19 (Rewards Students with Verbal and Nonverbal Praise). Factor scores yielded no significant difference at the .05 level.

4. There were significant differences in the perceptions of teaching behaviors as perceived by male and female students on Items 2 (Gives Personal Compliments), 7 (Lets the Students Keep Their Own Records in Relation to Objectives), 8 (Lets Students Move Around Without Them Having to Ask Permission), 17 (Divides up Skill Levels within the Class), 20 (Rewards Students by Giving Materials, such as Certificates, Points, Badges, etc.), and 21 (Encourages Self-Discipline).

Factor scores yielded a significant difference at the .05 level for Factors II (Teacher and Student Cooperative Behaviors) and VI (Nonverbal and Verbal Rewarding Behaviors).

Implications

The significance of this study lies in its potential for application to the study of teaching behavior of physical education teachers. One such application might be that the DTBPS could be used as an observational instrument. Students, teachers, peers, administrators, or supervising teachers could use the DTBPS to rate teaching behaviors. The results of its use could be used as feedback to the teachers in order for them to see how others perceive their teaching in comparison to their own perceptions. The use or lack of use

of certain behaviors could hinder teachers in attaining certain objectives within their classes.

The rating scale could be used as a preservice or inservice tool to help student teachers and teachers become aware of behaviors they may or may not be using. Finally, pending the results of further investigations, the rating scale could be a forerunner of other observational scales that investigate teaching behaviors.

Recommendations for Further Study

This study compared perceived teaching behaviors of physical education teachers to perceptions held by their students. This study was an attempt to help further the research concerning the study of teaching behaviors in physical education. However, this study was one of a piece of research that hopes to add pertinent information to the physical education literature; therefore, recommendations for future study, based on the findings of this study, are as follow:

1. The DTBPS could be completed by male and female students and teachers of physical education settings at the junior, senior, and college level.
2. Readminister the scale to a larger random sample in order to generalize results of findings.
3. Devise specific research inquiries which utilize the scale as one variable of teaching behaviors such as inservice programs, student achievement, sex, etc.

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APPENDIX A

TEACHING BEHAVIORS SUBMITTED TO
PHYSICAL EDUCATION TEACHERS

As a physical education teacher I	Clear	Unclear
1. give compliments pertaining to class work		
2. give personal compliments		
3. deal with discipline problems individually		
4. spend time dealing with discipline problems		
5. smile, wink, laugh, etc. . .		
6. touch the students, besides in demonstrating a skill		
7. talk very loud		
8. frown when trying to exert my authority		
9. frown when I see students doing a skill incorrectly (also may shake or drop head)		
10. give directions during a given lesson		
11. order students during a given lesson		
12. ask questions during a given lesson to get them to use their cognitive abilities		
13. encourage students to respond verbally/nonverbally by accepting and/or expanding on their ideas/actions		
14. blow my whistle		
15. yell at students that are doing a skill incorrectly		
16. sing or whistle		
17. let the students keep their own records in relation to objectives		
18. am the center of attention		
19. accept only one way as being correct		

As a physical education teacher I	Clear	Unclear
20. remain detached from the student's activities		
21. reward students intrinsically		
22. reward students extrinsically		
23. have all students working at the same time on the same task		
24. encourage self-discipline		
25. develop a helping attitude instead of an authoritarian attitude		
26. interact freely with students of either sex		
27. interact freely with students of all races		
28. interact freely with conforming students		
29. interact freely with extroverted students		
30. interact freely with introverted students		
31. am concerned about offering competition and winning in class activities		
32. become frustrated with slow learners		
33. am open to criticism and suggestions concerning my teaching from students		
34. let the students make-up the managerial rules		
35. complain to my students about administrative controls		
36. let students move around without their having to ask permission		
37. do not like students to be talking while they are participating		

As a physical education teacher I	Clear	Unclear
38. do not mind if some students are talking softly while I am demonstrating and/or lecturing 39. let the students voluntarily group themselves 40. improvise activities on the spur of the moment 41. allow for the students to make up their own activities 42. correct students individually 43. show the whole class a correction that I have seen someone do wrong 44. ask students to help each other out in skill acquisition 45. have the students work individually 46. participate with the students 47. demonstrate the skills of an activity 48. let the students have a choice in the activities they do 49. give more individual attention than group or whole-class attention 50. divide up skill levels within classes 51. pay more attention to the highly skilled athlete than to the unskilled 52. answer questions posed by students 53. ignore abrasive comments made by students 54. try to move to all areas of the gym/field during class 55. listen to students when they are talking and asking questions about items not related to class		

	Clear	Unclear
<u>As a physical education teacher I</u>		
56. explain the skills of an activity		
57. go over the main points at the end of the lesson		

APPENDIX B

TEACHING BEHAVIOR SCALE

As a physical education teacher, I	Strongly Perceived	Sometimes Perceived	Never Perceived
1. give compliments pertaining to class work			
2. give personal compliments			
3. deal with discipline problems individually			
4. frown when I see students doing a skill incorrectly (also may shake or drop head)			
5. give directions during a given lesson			
6. ask questions during a given lesson to get them to use their cognitive abilities			
7. encourage students to respond verbally/nonverbally by accepting and/or expanding on their ideas/actions			
8. blow my whistle			
9. yell at students that are doing a skill incorrectly			
10. sing or whistle			
11. let the students keep their own records in relation to objectives			
12. let students move around without their having to ask permission			
13. do not like for students to be talking while they are participating			
14. do not mind if some students are talking softly while I am demonstrating and/or lecturing			
15. let the students voluntarily group themselves			
16. improvise activities on the spur of the moment			

As a physical education teacher, I	Strongly Perceived	Sometimes Perceived	Never Perceived
17. allow for the students to make up their own activities			
18. correct students individually			
19. show the whole class a correction that I have seen someone do wrong			
20. ask students to help each other out in various activities			
21. have students work individually			
22. participate with the students			
23. demonstrate the skills of an activity			
24. let the students have a choice in the activities they do			
25. give more individual attention than group or whole class attention			
26. divide up skill levels within the class			
27. accept only one way as being correct			
28. let students work on their own without my interrupting			
29. reward students by giving materials, such as certificates, points, badges, etc.			
30. reward students with verbal and non-verbal praise			
31. have all students working at the same time on the same task			
32. encourage self-discipline			
33. develop a helping attitude instead of an authoritarian attitude			

As a physical education teacher, I	Strongly Perceived	Sometimes Perceived	Never Perceived
34. interact comfortably with students of all races			
35. interact comfortably with nonconforming behavior students			
36. interact comfortably with students of either sex			
37. interact comfortably with extroverted students			
38. interact comfortably with introverted students			
39. become frustrated with slow learners			
40. am open to criticism and suggestions concerning my teaching from students			
41. complain to my students about administrative control and policies of the school			
42. pay more attention to the highly skilled student than to the unskilled			
43. answer requests and questions posed by students			
44. ignore abrasive comments made by students			
45. try to move to all areas of the gym/field during class			
46. listen to students when they are talking and asking questions about items not related to class			
47. explain the skills of an activity			
48. go over the main points at the end of the lesson			
49. laugh and smile			

APPENDIX C

LETTER REQUESTING COMPLETION
OF SCALES

May 15, 1978

Dear Teacher/Coach,

My name is Regina Daniel and I am presently working on that "hard to get" degree, known as doctorate. I was wondering if you would take approximately eight minutes to help me in my "state of desperation?"

My independent study is concerned with validating and establishing reliability of two behavior scales that are applicable to teaching physical education and coaching sports. This is the first step in conducting a pilot study for constructing scales that may be used for studying perceptions between coach/athlete and teacher/student.

Please don't throw the enclosed scales away, but tear this sheet off and fill out the scales that may be applicable to you. You need not sign your name and if you do, all information will be kept confidential. I would really appreciate you taking out the small amount of time from "your busy schedule" to complete the scales. Thank you for your time and have a good day.

Sincerely yours,

Regina Daniel

APPENDIX D

REVISED TEACHING BEHAVIOR SCALE
FOR PHYSICAL EDUCATION TEACHER

As a physical education teacher, I	Often Perceived	Sometimes Perceived	Never Perceived
1. give compliments pertaining to class work			
2. give personal compliments			
3. deal with discipline problems individually			
4. give directions during a given lesson			
5. ask questions during a given lesson			
6. encourage students to respond verbally/ nonverbally by accepting and/or expanding on their ideas/actions			
7. let the students keep their own records in relation to objectives			
8. let students move around without their having to ask permission			
9. let the students voluntarily group themselves			
10. allow the students to make up their own activities			
11. correct students individually			
12. show the whole class something that a student has done wrong while practicing a motor skill			
13. ask students to help each other out in various activities			
14. have students work individually			
15. demonstrate the skills of an activity			
16. give more individual attention than group or whole class attention			
17. divide up skill levels within the class			

As a physical education teacher, I	Often Perceived	Sometimes Perceived	Never Perceived
18. let students work on their own without my interrupting			
19. reward students with verbal and non-verbal praise			
20. reward students by giving materials, such as certificates, points, badges, etc.			
21. encourage self-discipline			
22. develop a helping attitude instead of an authoritarian attitude			
23. interact comfortably with nonconforming behavior students			
24. interact comfortably with extroverted students			
25. interact comfortably with introverted students			
26. am open to criticism and suggestions concerning my teaching from students			
27. answer requests and questions posed by students			
28. explain the skills of an activity			
29. go over the main points at the end of the lesson			
30. laugh and smile			

APPENDIX E

REVISED TEACHING BEHAVIOR SCALE
FOR PHYSICAL EDUCATION STUDENT

My physical education teacher	I Can Not Read This Item	I Do Not Understand This Item
1. gives compliments pertaining to class work		
2. gives personal compliments		
3. deals with discipline problems individually		
4. gives directions during a given lesson		
5. asks questions during a given lesson		
6. encourages students to respond verbally/ nonverbally by accepting and/or expanding on their ideas/actions		
7. lets the students keep their own records in relation to objectives		
8. lets students move around without their having to ask permission		
9. lets the students voluntarily group themselves		
10. allows the students to make up their own activities		
11. corrects students individually		
12. shows the whole class something that a student has done wrong while practicing a motor skill		
13. asks students to help each other out in various activities		
14. has students work individually		
15. demonstrates the skills of an activity		
16. gives more individual attention than group or whole class attention		
17. divides up skill levels within the class		

My physical education teacher	I Can Not Read This Item	I Do Not Understand This Item
18. lets students work on their own without interrupting		
19. rewards students with verbal and nonverbal praise		
20. rewards students by giving materials, such as certificates, points, badges, etc.		
21. encourages self-discipline		
22. develops a helping attitude instead of an authoritarian attitude		
23. interacts comfortably with nonconforming behavior of students		
24. interacts comfortably with extroverted students		
25. interacts comfortably with introverted students		
26. is open to criticism and suggestions concerning his/her teaching		
27. answers requests and questions posed by students		
28. explains the skills of an activity		
29. goes over the main points at the end of the lesson		
30. laughs and smiles		

APPENDIX F
INFORMED CONSENT FORM

THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO
SCHOOL OF HEALTH, PHYSICAL EDUCATION & RECREATION

SCHOOL REVIEW COMMITTEE

INFORMED CONSENT FORM*

I understand that the purpose of this study/project is
to develop a tool to measure perceptions of physical educa-
tion teaching behaviors found in secondary schools

I confirm that my participation is entirely voluntary. No coercion of any kind has been used to obtain my cooperation.

I understand that I may withdraw my consent and terminate my participation at any time during the project.

I have been informed of the procedures that will be used in the project and understand what will be required of me as a subject.

I understand that all of my responses, written/oral/task, will remain completely anonymous.

I understand that a summary of the results of the project will be made available to me at the completion of the study if I so request.

I wish to give my voluntary cooperation as a participant.

Signature

Date

*Adopted from L. F. Locke and W. W. Spirduso. Proposals that work. New York: Teachers College, Columbia University, 1976, p. 237.

Approved 3/78

APPENDIX G

ELIMINATED TEACHING BEHAVIORS

My physical education teacher	I Can Not Read This Item	I Do Not Understand This Item
6. encourages students to speak and perform during class		
7. lets the students keep their own records and charts during class		
12. shows the whole class something that a student has done wrong while practicing physical activities		
19. rewards students with words and actions		
22. shows a helping attitude toward students instead of a controlling attitude		
23. deals comfortably with students that misbehave		
24. deals comfortably with students who are outgoing		
25. deals comfortably with students who are shy		
27. answers requests and questions asked by students		

APPENDIX H

DANIEL TEACHING BEHAVIOR PERCEPTION SCALE
(DTBPS)

STUDENT'S FORM

TEACHER'S FORM

Daniel Teaching Behavior Perception Scale
(DTBPS)
Student's Form

Male Female

Personal Data: Sex _____

School: _____

Age: _____

Directions: On the back of this sheet, you will find statements pertaining to your teacher's behavior in physical education class. Please rate your teacher according to how you perceive his/her behavior most of the time. Please rate all behaviors. If there is difficulty in understanding any word or item, raise your hand and the researcher will come to you and explain them.

EXAMPLE

	Often Perceived	Sometimes Perceived	Never Perceived
<u>My physical education teacher</u>			
1. helps me acquire basketball skills			

Daniel Teaching Behavior Perception Scale
(DTBPS)

	Often Perceived	Sometimes Perceived	Never Perceived
<u>My physical education teacher</u>			
1. gives compliments pertaining to class work			
2. gives compliments pertaining to personal appearance			
3. deals with discipline problems individually			
4. gives directions during a given lesson			
5. asks questions during a given lesson			
6. encourages students to speak and perform during class			
7. lets the students keep their own records and charts during class			
8. lets students move around without their having to ask permission			
9. lets the students voluntarily group themselves			
10. allows the students to make up their own activities			
11. corrects students individually			
12. shows the whole class something that a student has done wrong while practicing physical activities			
13. asks students to help each other out in various activities			
14. has students work individually			
15. demonstrates the skills of an activity			
16. gives more individual attention than group or whole class attention			

My physical education teacher	Often Perceived	Sometimes Perceived	Never Perceived
17. divides up skill levels within the class			
18. lets students work on their own without interrupting			
19. rewards students with words and actions			
20. rewards students by giving materials, such as certificates, points, badges, etc.			
21. encourages self-discipline			
22. shows a helping attitude towards students instead of a controlling attitude			
23. deals comfortably with students that misbehave			
24. deals comfortably with students who are outgoing			
25. deals comfortably with students who are shy			
26. is open to criticism and suggestions concerning his/her teaching from the students			
27. answers requests and questions asked by students			
28. explains the skills of an activity			
29. goes over the main points at the end of the lesson			
30. laughs and smiles			

Daniel Teaching Behavior Perception Scale
(DTBPS)
Teacher's Form

Male Female

Personal Data: Sex _____

School: _____

Social Security Number: _____

Directions: On the back of this sheet, you will find statements pertaining to your teacher's behavior in physical education class. Please rate your teacher according to how you perceive his/her behavior most of the time. Please rate all behaviors. If there is difficulty in understanding any word or item, raise your hand and the researcher will come to you and explain them.

EXAMPLE

	Often Perceived	Sometimes Perceived	Never Perceived
As a physical education teacher I			
1. give individual help in teaching basketball skills			

Daniel Teaching Behavior Perception Scale
(DTBPS)

As a physical education teacher, I	Often Perceived	Sometimes Perceived	Never Perceived
1. give compliments pertaining to class work			
2. give compliments pertaining to personal appearance			
3. deal with discipline problems individually			
4. give directions during a given lesson			
5. ask questions during a given lesson			
6. encourage students to speak and perform during class			
7. let students keep their own records and charts during class			
8. let students move around without their having to ask permission			
9. let the students voluntarily group themselves			
10. allow the students to make up their own activities			
11. correct students individually			
12. show the whole class something that a student has done wrong while practicing physical activities			
13. ask students to help each other out in various activities			
14. have students work individually			
15. demonstrate the skills of an activity			
16. give more individual attention than group or whole class attention			

As a physical education teacher, I	Often Perceived	Sometimes Perceived	Never Perceived
17. divide up skill levels within the class			
18. let students work on their own without interrupting			
19. reward students with words and actions			
20. reward students by giving materials, such as certificates, points, badges, etc.			
21. encourage self-discipline			
22. show a helping attitude towards students instead of a controlling attitude			
23. deal comfortably with students that misbehave			
24. deal comfortably with students who are outgoing			
25. deal comfortably with students who are shy			
26. am open to criticism and suggestions concerning my teaching from the students			
27. answer requests and questions asked by students			
28. explain the skills of an activity			
29. go over the main points at the end of the lesson			
30. laugh and smile			

APPENDIX I
INFORMATION REQUESTING PERMISSION
TO CONDUCT STUDY

May 25, 1980

Research and Testing Division
Guilford County Public Schools
120 Franklin Schools
Greensboro, North Carolina

Dear Sir:

Enclosed you will find a proposal for study in physical education to be conducted in the Guilford County and Greensboro City Schools. I would like to have permission to go into the schools the weeks of September 22 and 29th. Attached to this letter is a consent form that will be obtained from all students and teachers if they decide to participate in the study. Also included is an outline form of the proposal that was submitted to the School Review Committee of the University of North Carolina.

Thank you for your time and I would appreciate hearing about your decision as soon as possible. If you have any questions concerning this study, please feel free to call me at 375-6935.

Sincerely yours,

Regina Daniel

May 25, 1980

Research and Testing Division
Greensboro City Schools
712 N. Eugene Street
Greensboro, North Carolina

Dear Sir:

Enclosed you will find a proposal for a study in physical education to be conducted in the Greensboro and Guilford County Schools. I would like to have permission to go into the schools the weeks of September 22 and 29th. Attached to this letter is a consent form that will be obtained from all students and teachers if they decide to participate in the study. Also included is an outline form of the proposal that was submitted to the School Review Committee of the University of North Carolina.

Thank you for your time and I would appreciate hearing about your decision as soon as possible. If you have any questions concerning this study, please feel free to call me at 375-6935.

Sincerely yours,

Regina Daniel

THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO
SCHOOL OF HEALTH, PHYSICAL EDUCATION & RECREATION

SCHOOL REVIEW COMMITTEE

PRINCIPAL INVESTIGATOR'S PROJECT OUTLINE FORM

Name of Principal Investigator Mary Regina Daniel

Division within HPER Physical Education

Title of Proposed Project The Development of a Tool to
Measure Perceptions of Physical Education Teaching
Behaviors Found in Secondary Schools

Proposed Starting Date September 22, 1980 Duration Two weeks

Estimated Number of Human Subjects Involved in Project 270

I. Characteristics of Subjects (check as many boxes as appropriate).

- | | |
|---|---|
| ☐ Minors | ☐ Mentally Retarded |
| ☐ Adults | ☐ Pregnant Women |
| ☐ Prisoners | ☐ Legally Competent |
| ☐ Others (Specify) | <u>250 secondary pupils, 20 ninth</u>
<u>grade pupils, 11 teachers</u> |
| ☐ University Students | |
| ☐ Secondary School Pupils | |
| ☐ Elementary School Pupils | |

II. Consent and Withdrawal Procedures

- A. Consent obtained from: Individual X, Institution ,
Parent or Legal Guardian , Other (Specify)
- B. Type of Consent: Written (attach copy of consent statement) Oral (explain reason for not using written form and attach a verbatim statement of the oral request to the subject).
- C. Subjects are informed of withdrawal privileges (attach copy of statement).

Use the back of this page and additional sheets, as necessary, to respond to the remaining portions of this form.

III. Risks: Briefly describe the risks (physical, psychological, social) to the subjects, and indicate the degree of risk involved in each case.

IV. Benefits: Briefly describe the benefits (physical, psychological, social) to the subjects and/or humankind in general.

V. Methodology/Procedures

- A. Briefly describe the methods used for selection of subjects/participants.
- b. Briefly describe all other procedures to be followed in carrying out the project.
- C. Attach a copy of the proposal you are filing (Graduate School, Agency, etc.) and a copy of orientation information to subjects. Include questionnaires, interview questions, tests, and other similar materials.

VI. Agreements: Be signing this form, the principal investigator agrees to the following:

- A. To conform to the policies, principles, procedures, and guidelines established by the HPER School Review Committee (SRC).
- B. To supply the SRC with documentation of selection procedures and informed consent procedures.
- C. To inform the SRC of any changes in procedures which involve human subjects, giving sufficient time to review such changes before they are implemented.
- D. To provide the SRC with any progress reports it may request.

Date May 21, 1980 Signature _____

II.

- A. A written note attached to the proposal has been submitted to Greensboro City and Guilford County School Systems. The note requested permission to conduct the study in the two school systems. The researcher's telephone number and work number were attached in case there were questions or an appointment needed for discussing the study.
- B. The attached form is the form that will be used by students and teachers. City and county administrators of the school systems have said that students' parents will not have to sign a consent form due to the fact that the scale concerns the rating of teacher behaviors. They feel that the anonymity being used in the study will prevent any harmful risks by students.
- C. Any student that wishes to withdraw from participation in the study may do so at anytime (prior, during, and afterwards). The student's data will not be used in the study. Teachers may withdraw from the study at any time (prior, during, and afterwards). Neither the teachers' nor the students' data will be used in the study if a teacher withdraws from the study.

III.

Risks: Due to anonymity being used in the study, little social or psychological risks are involved. There will be no physical risks involved due to the fact that the study consists of filling out a scale by pencil. Anonymity of students' ratings will be handled by requesting that no students sign their names to the scales. Teachers anonymity will be handled by assigning number 1-26 to the letters of the alphabet, subsequently, using numbers that correspond to their initials.

IV.

Benefits: The results of this study will provide a scale for assessing perceptions of physical education teaching behaviors in the secondary school level. Students and teachers will be able to use the same scale. The scale will assist teachers in determining if their perceptions of their teaching behaviors are congruent with their students' perceptions. Teachers will also be able to assess perceptions of male students versus female students. The tool may also be used as a source of assessment by school administrators and supervisors. The tool will provide a format for similar forms of research in the area of teaching behaviors in physical education.

V.

Methodology/Procedures: See the attached proposal, starting on page thirteen.

APPENDIX J

THANK YOU LETTER

October 20, 1980

Regina Daniel
Western Piedmont Community College
Morganton, NC 28655

Dear

Thank you so much for you and your class participating in my research design concerning physical education teaching behaviors. Without your help, my study could not have been completed. All the teachers involved made the administration of the scale easier than had been anticipated.

Again thank you very much.

Sincerely yours,

Regina Daniel