RELATIONSHIPS AMONG LEADERSHIP ROLES, ATTITUDE TOWARD PHYSICAL ACTIVITY, AND PHYSICAL ACTIVITY SKILL SUCCESS

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CHAPTER I

NATURE AND SIGNIFICANCE OF THE PROBLEM

Introduction

> Education plays an important part in solving social problems. Its function is to improve society. Physical education, as part of the total educational process, can contribute to this goal. Physical education is a social experience. Through physical activities great strides can be made in achieving social progress and more satisfaction in living (Bucher, 1968, p. 582).

> Physical education activities are society in miniature (Baley and Field, 1970, p. 328).

The preceding quotations have broad implications for the possible contribution of physical education to general education and to society. When relating education to society and when preparing the individual for life, the educational goals which have been stated in the past attempted to include every known area of human development. As physical education emerged as a profession and began being taught in the public schools, there was a strong desire on the part of dedicated physical educators to be identified with total educational efforts. This close identification has been thought to have a stultifying effect upon physical education's capacity to develop fully its own identity (Kroll, 1971). Part of this bond with education may have been a denial that physical education had only physical connotations. As early as 1893, Wood (1962) refuted the claim of its strictly physical nature and related physical education to total education. The goals of American education identified in 1918 by

the National Education Association were health, command of the fundamental processes, worthy home membership, vocational competence, effective citizenship, worthy use of leisure, and ethical character. Siedentop (1972) reported that three of these principles--health, worthy use of leisure, and ethical character--were considered by leaders in physical education to be most directly applicable to physical education. Each of these goals proposed to help prepare the individual for a full life. A famous quote by Jesse Williams in 1930 emphasized the common goal of education and physical education: "Education through the physical will be judged, therefore, even as education for life will be judged - by the contributions it makes to fine living" (1966, p. 3).

In 1961, the Educational Policies Commission of the National Education Association revised the goals of general education to have as their central purpose the development of rational powers to aid students to think clearly (NEA, 1961). Although reference may have been made to separate aspects of the individual's physical, mental, or spiritual nature, many educators recognize and accept man in the holistic state. The role of physical education and its effect upon the whole person has, perhaps, been most convincingly described by Oberteuffer and Ulrich (1970):

> Education of an isolated "physical" is not possible; and the term "physical education" signifies education by means of experiences which involve activity and movement and which also have emotional, behavioral, and intellectual components. Modern physical education is a part of the total education process and is to be judged by its impact upon the whole man, not merely upon a few parts of him. Physical education seeks to assist in the total process of living (p. 3).

To facilitate the achievement of the general purpose of education for developing rational powers for clear thinking, objectives relating more specifically to the physical education curriculum have been

developed. Both leaders and textbook writers in this field have stated similar objectives. These objectives place a slightly different emphasis on basic needs, yet each writer attempted to be all inclusive. The objectives written in the realm of growth and development areas include: (1) Hetherington's (Siedentop, 1972) organic, psychomotor, character, and intellectual objectives; (2) Nash's (1948) physical fitness, sports understandings, and sportsmanship objectives; (3) Bookwalter and VanderZwaag's (1969) human growth and development, physiological, and sociological objectives; and (4) Baley and Field's (1970) physical fitness, human as an entity, emotional, social, intellectual, future, motor skills, and health objectives. The American Association of Health, Physical Education, and Recreation (1969) published objectives designed to promote development in the physiological, motor skill, intellectual, aesthetic, and social areas. The AAHPER objectives were an outgrowth of effort by a committee appointed to identify essential meaning and understandings in physical education at the secondary level. The four-fold objectives of physical, motor, mental, and social development proposed by Bucher (1968) have received wide acceptance by the profession.

Some physical educators have suggested that in attempting to equally emphasize development in the four-fold areas, none were being adequately accommodated. Attempts to establish a priority for objectives have been undertaken. Bucher (1968) reported a survey of selected leaders in the field of physical education which gave highest priority to organic and neuromuscular development. Lowest priority was assigned to social development in the survey. The reason for this low position was due, perhaps, to the assumption that all subject areas purportedly stressed the social objectives, hence subsuming some of the physical

education responsibility for producing social outcomes. In the final analysis the question of priority for objectives will be solved by the individual teacher of physical education depending upon "his philosophy, his understanding of the worth of physical education, and what physical education can and should be trying to contribute to the human beings and to society" (Bucher, 1968, p. 175).

If the ultimate goal of the individual physical education teacher were to provide a facilitating environment for the student to attain full self-realization in the physical, motor, mental, and social domains, a thorough understanding of each objective should be most germane. In this writer's opinion, establishing priorities for objectives should not be relevant. Assuming that physical education activity classes closely resemble simulated societies, that social interaction exists which may affect behavioral change, that the potential for motor and cognitive learning is evident, and that physical skills are acquired, it seems appropriate to initiate ground work in this setting for increasing the understanding of the worth and purpose of physical education. The complexity of this setting does not lend itself to a study of each of the developmental areas independently. The interaction among the four areas imposes restrictions upon segregating one aspect for examination and for controlled study. It may be more plausible to consider the importance of the objectives in their integrative state.

The extent to which objectives will be transferred and incorporated into the everyday life style and the future life style of the physical education student may depend upon the structuring of the class environment by the teacher. If physical activities do indeed constitute a miniature society, and if living in society outside the educational

institution requires some degree of mental, emotional, social, spiritual, and physical development, it should be most efficacious for the physical education teacher to increase his understanding of the learning environment. Rather than view these objectives as separate entities in the learning process, a study of the integrative and interacting influences may provide greater insight into the outcomes. The social forces operating in physical education activity classes might be identified and found to be closely associated with the self-realization goals.

It is the intent of this writer to examine some of the aspects of socialization that take place within the framework of physical education activity classes. Kenyon (1968a) has pointed out that physical education and sports are valuable areas of social interaction where an analysis of the socialization process can be conducted. Social learnings do not issue forth out of a vacuum, nor has it been possible to isolate a measure of human interaction within a group to establish a causal relationship between the interaction and some other specified outcome. From observing social behavior over a number of years in physical education classes, this writer believes that some kinds of structures exist within groups which are striving to achieve physical and social goals, that the structure can be identified, and that interrelationships may be identified.

Martens and Landers (1969) referred to research indicating that positive and negative social reinforcement affects motor performance. They stated that "the implications of such research suggests that physical educators must not only be cognizant of physiological and kinesiological factors in skill acquisition and motor performance, but also of social and psychological factors" (Martens and Landers, 1969,

p. 737). The importance of studying and attempting to understand socialized, educated man through movement-oriented behavior will be obvious to many concerned with sociopsychological influences. Snyder (1970) has pointed out that there is specific need within physical education to focus attention on the socialization process. He noted that "this understanding is necessary to predict and achieve control over the socialization outcomes. No other consideration is more important within the profession. Priority should be given to these matters" (p. 6).

Kenyon (1968a) stressed that the social objective referred to by physical educators may be achieved through "socialization," a process of learning to play roles as a member of various social groups. One of the socialization processes to be considered in this study is the identification of leadership roles within physical education activity classes. Cratty (1968) defines a leader as the individual perceived by the group as best able to solve the group's problem(s); and he describes this perception as being appointed by a higher authority, as being selected by the group, or as being seized by a group member. Ulrich (1968) has stated that leaders are fashioned by the game in such a way that it is always possible for the skill and behavior of one person to be apparent to all who observe the game. It is conceivable then that group members may be able to identify types of leaders through observation and association regardless of whether they have been appointed, selected, or seized.

The identification of leadership styles may be based on the social skills and/or the physical skills displayed by an individual. Snyder (1970) described "instrumental" socialization and "expressive" socialization as they affect student-teacher relationships. The instrumental

relationships impart knowledge and skills functionally specific for the achievement of desired ends, while the expressive relationships, in contrast, are affective and personally satisfying ends in themselves. This study will attempt to identify leaders as "instrumental" or "expressive" in disposition, allowing for the possibility that these roles may be evident simultaneously in one individual. These roles may be observed in the appointed teacher-leader, the self-appointed student-leader, or through a voluntary selective process. The impact of these leadership roles, particularly as performed by students, has received little more than passing comment in the literature.

Within the realm of group physical activity Cratty (1968) claimed that the immediate needs of the situation will determine the selection of a leader who was involved with the physical tasks to be accomplished or the immediate social needs. Either or both of these leadership roles could be played by either the teacher or the students in a physical education class. Oberteuffer and Ulrich (1970) stated "A good program of physical education sees that a substantial part of the leadership is vested in the student and that situations are not always teacher-directed or coach-directed" (p. 41). The importance of structuring physical education to provide ample opportunity for dispersed leadership has also been expressed by Bookwalter and VanderZwaag (1969).

Another of the important social influence processes to be investigated in this study is possible changes in attitude toward physical activity which may be evidenced by the physical education student. Martens (1970) contended that the study of attitudes is most useful in accounting for individual difference in reacting to a given situation. Al-Talib (1970) believed that since people's attitudes affect their

selection or avoidance of activities, the study of the student's attitudes could contribute tremendously to the evaluation and development of good physical education programs. Sherif and Sherif (1967) maintained that attitudes are seldom changed in lonely situations, but evolve with reference to others with whom an individual has ties. The group interaction may influence a positive attitude change toward physical activity as the individual participates in the various class assignments.

The purpose for teaching an activity is to effect change. Endeavors are made to attain positive changes in such areas as skill level and attitude toward the activity. Mager (1968) has emphasized that teaching goals cannot be reached unless the student is influenced to become different in some way than he was before instruction was undertaken. He argued that the universal objective must be to send the student away from instruction with a greater tendency to "approach the subject" than he had when he first came into contact with the subject. Improvements in skill level and positive outlooks may ensue as a result of instruction, team play, individual and group practice, being physically active, and from other aspects of class participation. Any one of these factors may influence a change in attitude. Although this study is concerned with skill level and group relations, it will center upon that area of attitude change as it relates primarily to leadership roles.

Finally, the assessment of "skill success" as the student learns and seeks to become proficient in performing physical skills will be explored in a psycho-social context. Skill success in this study will be measured by student self-appraisal and by teacher-appraisal. One study used the final grade from the teacher as the success indicator in physical education activity classes (Vincent, 1967). McGee and Barrow

(1966) pointed out that evaluation is a continual, universally practiced process which is essential in indicating the need to improve or maintain the status quo. A final evaluation by either the teacher or the student could index the extent to which an activity is pursued beyond the initial exposure. Skill acquisition may be evaluated extrinsically by an observer; or the performer may intrinsically judge his feelings of accomplishment one skill at a time or from his general feelings of success.

Rogers (1971) noted the importance of self-evaluative judgment in the process of "becoming a person." The self-reliant, creative individual increasingly comes to feel that the locus of evaluation lies within himself and as Rogers (1971) emphasized, the most important question to be asked is: "Am I living in a way which is deeply satisfying to me and which truly expresses me" (p. 70)? In another context, Rogers (1969) expressed a need for some degree of self-evaluation to be built into any attempt to promote an experiential type of learning. He stated that independence, creativity, and self-reliance are all facilitated when self-criticism and self-evaluation are basic. Self-evaluation has also been supported by two prominent physical education philosophers:

> Physical education should recognize the merit in accurate self-appraisal and should help student develop the capacity to see themselves as they are with hopes of what they might become. One of the marks of the educated man is his ability to appraise himself, his talents, his possibilities, and his limitations with fair accuracy and to withstand the temptation to under or over estimate himself. The world of movement is an excellent laboratory in which experience in self-appraisal may be accomplished (Oberteuffer and Ulrich, 1970, p. 100).

In the field of physical education, there is a need to investigate methods of teaching, organizational procedures which may promote better social structuring within physical activity classes, the facilitation

and fulfillment of affective objectives, and techniques for evaluating effective teaching. An attitude scale designed to provide information specifically in the area of physical activity rather than in the broad, diffuse area of physical education which could be readily administered and easily interpreted could be advantageously used by physical educators. Leadership roles have been studied in numerous group settings, but to this writer's knowledge, there is no available literature relating leadership roles to the effective performance of physical skills and socio-psychological aspects of affective development in physical education. There is a need to determine the nature of relationships between the two leadership roles identified in studies conducted outside the educational setting and the acquiring of better attitudes, better self-attitudes toward physical skill accomplishment, and better skill performance. With investigations into the socialization processes, more usable knowledge could emerge which may provide direction to the teacher for motivating the individual student toward the attainment of higher values through group experiences in physical education.

Statement of the Problem

The purposes of this study were to investigate within college physical education activity classes the interrelationships between "expressive" (social) and "instrumental" (skill) leadership and: (1) attitude change toward physical activity; (2) skill success as perceived by the student; and (3) skill success as perceived by the teacher. A second purpose of this investigation was to develop a scale for measuring positive and/or negative attitude orientations toward physical activity. A further purpose of the study was the development of a survey instrument

which could be utilized for the identification of "expressive" and "instrumental" leadership roles by teachers and students. Criteria for the instrument were the relative ease of administration and validity.

In essence, this study statistically tested twelve null hypotheses which focused generally upon these questions: (1) Will the student's tendency to identify leadership roles relate to whether he reveals a positive attitude toward physical activity, whether he rates himself high in skill success, or whether he is rated high by his teacher in skill success? (2) Will classes which tend to identify leadership roles show a more favorable attitude toward physical activity and/or high skill success ratings? (3) Will it be possible to find trends among significantly related variables; e.g., will teachers identified as having "expressive" leadership relate more strongly to the other variables than student "expressive" leadership?

Clarification of Terminology

The basic definitions of the principal terms for this study are presented below. Terms and phrases limited to the basic concepts of this study are classified under types of variables and units of analysis. Since these terms and phrases appear within the hypotheses and throughout the study it seems feasible to introduce them in this section. General terms of prominence to this study have also been defined.

Independent Variables

1. Expressive Leader - a student or teacher identified by a class member as one who particularly applauded or complimented his efforts,

offered encouragement, and made him feel that he was a contributing member of the class.

2. Instrumental Leader - a student or teacher identified by a class member as one who impressed him as being highly skilled, knowledgable, and particularly concerned with improving the skill level of others.

3. Dual Leadership Roles - a role indicated for a student or teacher who was identified both as an "expressive" and "instrumental" leader.

Dependent Variables

1. Favorableness Toward Physical Activity - an attitude which indicated that an individual was positively oriented toward physical activity. A favorableness score was calculated for each student by subtracting the score obtained on the attitude scale at the beginning of the semester from the score obtained on the scale at the end of the semester.

2. Student-Rated Skill Success - a self-evaluation by the student of his accomplishments in acquiring the physical skills of the class. Each student used his own criteria to rate himself on a scale from 0 to 9.

3. Teacher-Rated Skill Success - an evaluation by the teacher of each student's accomplishments in acquiring the physical skills of the class. Teachers were to establish criteria for evaluation compatible with their own standards. A scale from 0 (lowest) to 9 (highest) was utilized.

General Terms

1. Physical Activity - a sociopsychological phenomenon denoting organized, non-utilitarian, gross human movement usually manifested in active games, sports, calisthenics, and dance (Kenyon, 1968b).

2. Socialization - a process of learning to play roles as a member of various social groups (Kenyon, 1968a).

Units of Analysis

1. The Individual - a unit composed of those students who identified no leadership roles (low group) or from 1 to 9 leadership roles (high group) on each kind of leadership.

2. Between Classes - a unit composed of those physical education activity classes in which students identified fewer than the median number of leadership roles than were identified by other classes (below-median group), or those classes in which more than the median number of leadership roles were identified than were identified by other classes (above-median group) on each kind of leadership.

General Nature of the Inquiry

This attempt to study the relationships between leadership roles, attitude toward physical activity, and skill success was exploratory research. As an exploratory study it followed an empirical approach. This writer was unable to find evidence or theory which would suggest that experiences in leadership role-playing through physical education programs facilitate the socialization process, change attitude, or improve skills. Kenyon (1968b) pointed out that despite the availability

of both theory and empirical findings concerning the process of socialization in general and the contribution of the school system in particular, few investigators have undertaken studies to determine unique contributions of the physical education curriculum. The scarcity of studies to support the socialization role of expressive and instrumental leaders, the lack of theory to account for attitude change toward physical activity, and the lack of evidence needed to substantiate the significance of extrinsic and intrinsic evaluation of skill success in physical education experiences all combined to structure the nature of this inquiry. The number and variety of leaders to be identified, the units of analysis, and the three dependent variables indicated a potential for several relationships existing. This led to the construction of twelve hypotheses and the possibilities for exploring several kinds of sub-groupings within the findings.

Null Hypotheses to be Tested

Hypothesis I: Individuals who identify at least one student in the "expressive" leadership role will not be significantly different from individuals who fail to identify student "expressive" leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis II: Individuals who identify at least one student in the "instrumental" leadership role will not be significantly different from individuals who fail to identify student "instrumental" leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis III: Individuals who identify at least one student in the dual leadership role will not be significantly different from individuals who fail to identify a student in the dual leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis IV: Classes which are above the median in student "expressive" leadership roles will not be significantly different from below-median classes in student "expressive" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis V: Classes above the median in student "instrumental" leadership roles will not be significantly different from below-median classes in student "instrumental" leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis VI: Classes above the median in student dual-leadership roles will not be significantly different from below-median classes in student dual-leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis VII: Individuals who identify at least one teacher in the "expressive" leadership role will not be significantly different from individuals who fail to identify a teacher in the "expressive" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis VIII: Individuals who identify at least one teacher in the "instrumental" leadership role will not be significantly different

from individuals who fail to identify a teacher in the "instrumental" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis IX: Individuals who identify at least one teacher in the dual leadership role will not be significantly different from individuals who fail to identify a teacher in the dual leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis X: Classes above the median in teacher "expressive" leadership role will not be significantly different from below-median classes in teacher "expressive" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis XI: Classes above the median in teacher "instrumental" leadership role will not be significantly different from below-median classes in teacher "instrumental" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

Hypothesis XII: Classes above the median in teacher dual leadership role will not be significantly different from below-median classes in teacher dual leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, (c) teacher-rated skill success.

CHAPTER II

RESUME OF RELATED STUDIES

Introduction

Research in the area of leadership roles, attitude change toward physical activity, and skill success evaluation by students and by teachers as a measure of skill acquisition or of perceived success has been difficult to find in the physical education literature. Most of the studies identifying leadership, attitudes and successful performance as the major concerns were conducted in the sociopsychological fields of research. Leadership and performance achievement have been correlated; attitude change has been extensively studied; and the importance of attaining a self-satisfying feeling of success in skill tasks has been investigated. Interrelationship studies, however, were not available. The absence of studies supporting one of the social objectives, developing desirable attitudes, was conspicuous. Siedentop (1972) concluded that there appears to be little research evidence which suggests that participation in programs of physical education will change habits, attitudes, and values. Cratty (1967) also reported that the number of investigations dealing directly with the social dimensions of physical activity is relatively small. Although physical educators such as Mosston (1966) and Sheehan and Alsop (1972) have emphasized teaching methods in achieving social-psychological objectives, attitude toward self and self-evaluation have not been shown to relate to physical

education. Hellison (1970) stated that physical educators have not directly investigated the effect of physical education programs and teaching methods on the self-attitude and that both relevant theory and relevant studies are scarce.

For the sake of clarity and because of the lack of research relating leadership, attitudes, and skill success, each will be treated separately in this chapter. The first section will be devoted to the various definitions and means of identifying the two leadership roles of concern in this study and to reporting studies pertaining to the two leadership styles. The second section deals with attitude change and a limited number of studies in the area of attitude toward physical activity. The last section involves the two evaluative measures of skill success and relates some research supporting the validity and the veracity of the measure.

Leadership Styles

Leadership was defined by Davey (1970) as a process of influencing other people to work cooperatively together; consequently, he believes leadership may either be designated or it may emerge. Ulrich (1968) described the best type of leadership as an attempt to help individuals within the group achieve private goals without always insisting that private goals be subservient to group needs. In a review of studies suggesting why leadership appears, Sherif and Sherif (1969) concluded that personality traits did not account for the gaining and maintaining of leadership, but the interpersonal contributions that the individual becomes capable of eliciting in a specific setting does indicate

leadership. These definitions indicate that more than one leader may exist and may be identified in any given group and that his function is specific to the task or needs at hand.

The functional approach to the study of leadership was considered to be the most appropriate here. Leadership functions were termed by Johnson (1970) in his study to include setting goals, helping the group to proceed toward these goals, improving the stability of the group and insuring the satisfaction of individual members. Within this framework leadership was specific to a specific group in a particular situation and the choice of leaders was free to vary with the situation.

One of the early studies by Lewin and Lippitt (1938) differentiated between task-oriented and relationship-oriented leader behaviors. Bales (1958) designated the "task specialist" as the group organizer and director of activities toward achieving specific goals, while the "socio-emotional" specialist's task was to maintain group morale and harmony. The patterning of social interaction defined by Bales (1958) was confined to small discussion groups assigned to solve a standard type case problem. Goldenson (1970) in commenting on Bales' study suggested that the two functions could be carried out by the same person or by different persons.

Definitions and responsibilities of the two group leadership roles have been proposed by Jones and Gerard (1967):

> Group Maintenance Roles - "Roles" within a group that develop primarily to insure that the group will have good morale and resist dissolution. In Thibaut and Kelley's (1959) analysis these are roles leading to behavior that keeps the group members above "comparison level for alternatives" in spite of periods when the cost incurred by performance of task functions are not immediately covered by rewards from task accomplishment.

> Task Roles - "Roles" within a group governing primarily those actions that must be taken so that the group may accomplish its task. Closely related to the concept of "external systems" (pp. 656-657).

Jones and Gerard (1967) continued by emphasizing that maintaining morale and satisfying the followers' needs are among the most important responsibilities of leadership. They also conceded that although instrumental or task functions and socio-emotional or maintenance roles tend to attach themselves to separate persons, a dual leadership role may be competently provided but individuals capable of performing the dual roles competently are rare. Freedman, Carlsmith, and Sears (1970) suggested that both roles coexist between two persons, the skills of one complementing those of the other with the relative dominance of the two depending on the group's situation at any particular time. Snyder (1970) identified two types of relationships between persons and their socializing agents which could be applied in an educational setting. The instrumental relationships were viewed as imparting knowledge and skills functionally specific for the achievement of a desired end. The expressive relationships were broad, diffuse, affective, and personally satisfying ends in themselves. He reinforced the need for social roles when he stated:

> If physical education and sports are to develop traits necessary for diffuse roles, the socialization process must involve some aspects of an expressive relationship between the teacher and pupil (p. 6).

In a study conducted by Callahan and Robin (1969), Talcott Parsons' theory of role differentiation utilizing "instrumental-adaptive" and "integrative-expressive" functions and roles was adopted for investigation. The "instrumental-adaptive" referred to those roles associated with achieving and maintaining system identity, cohesion, and sentiments

(e.g., cheerleader or team captain). The "integrative-expressive" referred to those roles associated with achieving and maintaining system identity, cohesion, and sentiments (e.g., student council president or student judge). High school students were to choose desired characteristics of leaders for each type of school role. One of these hypotheses was that each type of characteristic would be selected for the appropriate type of role. However, students selected instrumental characteristics for both instrumental and integrative roles. The study showed that a simple dichotomy of instrumental and integrative roles is insufficient for their type of research, and that roles are complex structures with functions that vary over time and with substructure and audience.

In a paper describing a program of research on group effectiveness and the leader's psychological distance, Fiedler (1960) reported on his studies utilizing Assumed Similarity scores (based on the similarity which an individual sees between himself and another, or between two others persons whom he has been asked to describe). The Assumed Similarity Between Opposites (ASo) scores were dichotomized into high and low scoring persons. A low ASo leader was psychologically distant, less congenial and less comforting to his followers, and more task-oriented. A high ASo leader accepted or rejected individuals on a basis other than his ability to work with them; that is, he formed close and intimate relations. Fiedler's investigations of group effectiveness included: (1) unstructured teams with informal leaders, such as basketball and surveying teams, (2) formally structured B 29 bomber crews, army tank crews, and open hearth shops, and (3) complex organizations in which one group was subordinate to another. These groups performed objectively measurable tasks in which the effects of

interpersonal perception could be assessed with a minimum of ambiguity. Fiedler summarized his findings as follows:

> Psychologically distant leaders are more effective in promoting the productivity of task groups than are leaders with psychologically closer interpersonal relations. Prediction of leadership effectiveness--or group effectiveness--was only possible, however, when dealing with groups in which the leader had the de facto power and authority, as indicated by the group's informal structure (1960, p. 605).

This study indicates that where one task leader of a group is recognized as having power, his group will be more effective in performing the task. The social-emotional leader's group will not be as effective in accomplishing tasks, but may be more effective in other areas.

In addition to exploring the relationships between leadership style and group effectiveness, Eagly (1970) examined relationships between leadership style and recruitment of leadership roles. She contended that since Fiedler's (1969) research was carried out primarily on groups with appointed leaders, the possibility for emerging leaders was lacking. Eagly designated groups of five members whom she assigned to discuss a case study on juvenile delinquency, give a group answer within three minutes and then assess their perceptions of the discussion and each other on a questionnaire. The measuring instruments used were Fiedler's Least-Preferred Co-Worker Scale, the perception of group discussion, the perception of self and other group members, and a content analysis of statements by members at the end of the discussion to ascertain group effectiveness. She concluded that group effectiveness is a function neither of role only nor of personality only but of the interaction of role and personality. It appeared that a more exclusive concern with task success did not necessarily enhance group effectiveness. Thus, the

possibility for emergent leaders playing both task and social roles may have relevance to group effectiveness.

Fiedler (1969) reported in some of his more recent studies of leadership style on the underlying needs that motivate leader behavior and on the specific acts in which a leader engages while directing or coordinating the work of his group. His studies have involved leadership style since basic needs appear to remain constant while a leader's actions or behavior sometimes does change as the situation or group changes. Through a questionnaire he identified the high scoring Least Preferred Co-Worker (LPC) leader as tending to be "relationship-oriented" and the low scoring LPC leader as being primarily "task-oriented." Group situations were classified according to importance of leader influence with the group as: (1) leader-member personal relationships (i.e., social groups formed to promote enjoyment), (2) task structure (i.e., assignment can be programmed and specified in a step-by-step fashion), and (3) position power of leader (i.e., military order of command). The major finding of Fiedler's research was that "mixed situations" (combinations of 1, 2, or 3 above) required relationship-oriented leadership while very favorable and very unfavorable situations require task-oriented leaders with "mixed situations" eliciting only moderate influence over the group. The implications for educational groups may be that teachers and/or students who are relationship-oriented will be more effective where the structure or goals of the class are found in the previously mentioned "mixed situations."

Out of some 800 group studies reviewed by Davey (1970) over a period of years, none was working in an educational environment. Davey concluded in his review that Fiedler's Contingency Model utilizing the

LPC scale had important implications in the training of student teachers for recognizing their styles of leadership and to either adjusting their styles or the components of the situation to achieve a desired outcome. It was also his conviction that output as measured by Fiedler could not be the sole criterion for teacher effectiveness because task skills and human relationship skills vary with the situation and may be equally productive in every phase of development for the individual and for the group.

Attitude Change

"Attitudes are formed through experience and, in spite of their relative stability, can be changed through experience" (Jones and Gerard, 1967, p. 431). Studies reviewed by Jones and Gerard revealed that such factors as voluntariness in taking a role and incentives for taking a role were found to be related to attitude change. In relating straightforward and reliable findings from social-psychological research, Freedman, Carlsmith and Sears (1970) found that the greater the prestige of the communicator, the more the attitude change. Johnson (1970) concluded from studies by Deutsch and Solomon (1959) and Glass (1964) that a person's self-attitudes are susceptible to change by receiving information concerning the person's task performance or personality characteristics from an authoritative or significant other. Attitude change occurs as individuals interact with others facing common motives.

From studies by Hovland, Janis and Kelley (1968) and other similar studies reviewed by these researchers, generalizations emerged specifying the effects of the communicator, the communication, and the audience on attitude change. One of the findings which should be noted indicated

that persons who were most highly motivated to maintain their membership tended to be most susceptible to influence by other members within the group. Kelman's (1968) identification process as a determinant of attitude change has been said to occur when an individual adopts behavior derived from another person or a group because this behavior is associated with satisfying self-defining relationships to this person or group. An influencing agent who is likely to be an attractive object for such a relationship is one who occupies a role desired by the individual. A prominent field study conducted by Siegel and Siegel (1971) tested both the amount and direction of attitude change over a period of time in reference groups and membership groups. A reference group was defined as one in which a person aspired to attain or maintain membership. Siegel and Siegel's (1971) findings illustrated that the influence of reference groups on attitude change occurred in subjects who came to take the imposed, initially nonpreferred, membership group as their reference group.

Attitude Toward Physical Activity Scales

One of the earliest attitude scales developed in the physical education field was designed by Carr (1945) to determine the relationship between success in physical education and selected attitudes. Carr arrived at the conclusion that attitudes held by entering high school freshmen girls do influence their success in physical education as indexed by final grades in physical education. Fleming's (1972) historical examination of research on attitudes toward physical education which used attitude scales found only three studies--Stalnaker (1933), Moore (1941), and Carr (1945)--prior to Wear's (1951) study. The most extensively used attitude test has been the Wear Inventory and its modifications,

until recently when Kenyon's (1968c) six scales for assessing attitude began receiving attention as a valuable research instrument.

In a paper by Kenyon (1968b), physical activity as a sociopsychological phenomenon denoted organized, nonutilitarian, gross human movement usually manifested in active games, sports, calisthenics, and dance. Prior to Kenyon's work, instruments for measuring attitude developed by Adams (1963), Wear (1955), and Mason and Ventre (1965) were constructed in the limited domains of physical education, physical fitness and exercise, and athletics. Alderman (1970) used Kenyon's inventory for assessing attitude toward physical activity in a study to examine attitudes of championship male and female athletes. He found strikingly similar attitudes in the subjects. Other recent studies utilizing Kenyon's attitude inventory have been conducted by Clayton (1969), Cunningham (1970), Pratt (1971), and Seleen (1971).

Neale, Sonstroem and Metz (1969) utilized Sonstroem's Physical Activity Attitude Inventory to distinguish differences in attitude toward participation in physical activity between high- and low-fitness groups. Results of the study did provide evidence that physical fitness is related to attitudes toward physical activities. The high-fitness groups conceived of themselves as more capable at, and more attracted to, physical activity than the low-fitness groups. McPherson and Yuhasz (1968) also constructed an inventory for assessing men's attitudes toward exercise and physical activity. No further use of either of these two inventories was found.

The attitude toward physical activity inventory used in this study was constructed by the writer to provide a usable instrument which would measure attitude toward physical activity and not be too lengthy or

cumbersome for inclusion within the final questionnaire to be administered. It was determined that an instrument shorter in length and less diverse than the Kenyon instrument or other existing scales would be more applicable to the study.

Assessing Skill Success

Scott and French (1959) have suggested that anything which exists, exists in amounts; and if it exists in amounts, it can be measured. Numerous methods and a variety of techniques have been employed by physical educators in an attempt to determine specific skill acquisition and general motor abilities. One device for measuring the amount or degree of skill success encompassing all of the motor skills presented in a physical education class is the subjective rating scale. According to Barrow and McGee (1966), no apologies need be made for the use of subjectivity; all tests are based to a great extent on subjective opinion because all tests are validated by means of a criterion and all criteria eventually revert to the consensus of experts. The expert in a physical education class usually selected to rate students and eventually assign grades has been the teacher who is in a position to observe and make evaluation of the "total" student achievement.

In the area of physical performance, criteria for self-appraisal are usually apparent to the individual. A person's success may be determined by measuring an achieved distance, counting the number of hits or misses, timing the duration of a feat or by keeping score and identifying the winner. A more realistic self-rating was necessary for assessing the kind of skill success which could have included numerous or combined performance skills and still fulfill the individual's interpretation of

success. A self-rating which would reflect social comparison or consensus appeared to be appropriated in this study which is concerned with interaction and interrelationships. Cratty (1968) noted that an individual's feelings about personal success are dependent primarily upon the extent to which he feels he has reached some aspired goal rather than upon an absolute score obtained. Jones and Gerard (1967) have pointed out that in the absence of a physical evidential basis for an ability estimate, the person may rely on others as a source of information in making that estimate. The process may be through reflected appraisal, inferred from a response made toward him in a face-to-face confrontation, or through comparative appraisal, inferred from performances of others as bench marks against which to evaluate some aspect of himself. When a person has little in the way of his own prior performance on which to base his self-estimate, he may shape his evaluation on an expert's opinion statement or on an expert's performance; or he may rely upon a co-oriented peer who shares the value perspective of the person for evaluation of outcome level or performance. If we may assume that the teacher or an identified skill leader would be considered by the student as an expert and a teacher or a student identified as a co-oriented peer, the student-rating of skill success may become most pertinent.

Coopersmith (1967) revealed a conceptual analysis of success, also giving credence to a self-judgment type of rating. Coopersmith stated:

> . . . the process of self-judgment derives from a subjective judgment of success, with that appraisal weighted according to the value placed upon different areas of capacity and performance, measured against a person's personal goals and standards and filtered through his capacity to defend himself against presumed or actual occurrences of failure. The degree of self-esteem an individual actually expressed would

> thus reflect the extent to which his successes approached his aspirations in areas of performance that were personally valued, with his defenses acting to define and interpret what is "truly" valued, the "actual" level of aspiration, and what is regarded as "successful" (1967, p. 242).

Studies utilizing a self-rating of success are practically non-existent in the physical education literature. A study made by Heaps (1972) to examine the relationship of actual and perceived physical fitness to psychological functioning showed that subjects' perceptions of their fitness levels were positively related to feelings of self-acceptance and that subjects' actual fitness levels were only slightly related to their fitness self-estimates. Hardin (1969) conducted a study to determine the validity of using self-evaluations to estimate one's level of achievement in physical fitness and recreational sports. She found that all of the correlations between self-evaluation and physical performance were significant at the .01 level. The discrepancy between these two studies may indicate that further research in establishing the validity and meaning of self-evaluation is needed.

Keefer (1971) found that self-predictions of college achievement made by upperclassmen, high achievers, self-acceptants, or students who have shown themselves to be successful may be especially worth consideration in academic planning. In a number of studies reviewed by Bailey and Shaw (1971), the notion that accuracy of self-estimate of intelligence was significantly related to actual ability and academic achievement and that older students rated their ability closer to their actual ability. In studies conducted by Diggory (1966), self-evaluations again related specifically to the task being performed or to the ultimate goal for which the person was trying to qualify. There was a close functional connection with estimated probability of success.

The validity of an internalized, self-reinforcement paradigm as a model of achievement motivation was investigated with a sample of 230 ninth grade black pupils by Eiszler and Morrison (1972). This achievement motivation study found that students who more frequently report positive self-evaluation during some specific school-like task also have: (1) greater levels of expected task performance than students who less frequently report positive self-evaluations of performance, and (2) greater congruence between self-established standards and actual performance. Results of the findings were interpreted as testimony to the validity of reported self-evaluations during task performance as a measure of achievement motivation. And self-evaluations were consistent with actual successful performance.

Although the self-evaluation studies mentioned above provide conclusive evidence that self-evaluations of abilities or, as the case may be, of capabilities, none consistently corresponds to other measures of actual performance. Self-judgment may be the function of many variables. It may even be influenced by variables yet to be studied; however, other measures of internalized prediction of success have not been devised. In addition, the self-evaluation may even indicate the extent to which the student will pursue participation in an activity after the conclusion of his course work. Dillon's quote of Jersild suggests a need to evaluate teaching and learning beyond the instructional stages: "The ultimate test of the significance of what we teach and learn is not the amount that is learned but the personal implication of what is learned" (p. 81).

CHAPTER III

PROCEDURES

Introduction

After reviewing the literature in physical education, education, and social psychology, and after identifying the variables to be studied, it was determined that an exploratory type of investigation would be most appropriate. College physical education activity classes were selected to provide data from "real life" situations. No attempt was made to control or manipulate the variables. A design was chosen to test hypotheses which would disclose or deny the existence of relationships among the variables. The hypotheses were tested for statistical significance and for degree of relationship among the variables. This type of nonexperimental hypothesis testing as described and classified by Weber and Lamb (1970) has been termed most appropriate for sociological studies dealing with variables that are important in everyday life but defy the use of laboratory control.

Data were collected by means of questionnaires from selected student groups at Oklahoma State University during the 1971 fall semester. An Attitude Toward Physical Activity Scale was constructed with the aid of item analysis statistical process. Subjects were obtained to participate in the pre- and post-surveys. All of the data were transferred to computer cards and the statistical analysis was computed by use of selected programs.

Sources of Data

The collection of data served two purposes in this study. First, responses to the 40-item Student Physical Activity Attitude Inventory (see Appendix A) supplied data for the item analyses. Secondly, the 15-item Student Physical Activity attitude Inventory (see Appendix B) and the request forms for information from the Physical Education teachers (see appendix C) provided: (1) scores to determine attitude favorableness toward physical activity; (2) student's self-evaluated skill success rating; (3) questionnaire responses attempting to identify leadership roles; and (4) rating by teachers for each of their students in skill success.

Scale Construction

An attitude scale has been defined by Ford (1954) as a device for determining whether a person is higher or lower, more favorable or less favorable than other persons with regard to a single issue. In order to develop a measure of attitude toward physical activity, the literature pertaining to test construction procedures, such as item analysis and psychological scaling techniques, was consulted. The following definition of attitude as denoted by Kenyon (1968b) has been adopted for this study: "A latent or nonobservable, complex, but relatively stable behavioral disposition reflecting both direction and intensity of feeling toward a particular object, whether it be concrete or abstract" (p. 567). The other aspect of developing a scale for this specific problem required a definition of physical activity that reflected contemporary thinking. Again, Kenyon (1968c) offered the most explicit definition for this purpose: "Physical activity denotes

organized, nonutilitarian (in an occupational or maintenance sense), gross movement, usually manifest in active games, sports, calisthenics, and dance" (p. 97). In following the recommended procedures for empirically constructing a scale, the following to be subsequently discussed, were adhered to for this part of the present study:

1. Likert-type statements were determined to be the most appropriate for the construction and the scoring of an attitude toward physical activity-scale.

2. A number of statements about physical activity were collected.

3. The statements were examined in accordance with certain criteria.

4. Forty statements (see Appendix A) were selected and randomly ordered for the initial inventory.

5. The initial inventory was administered to two samples of college students.

6. An inter-item correlation was computed to provide a basis for item rejection.

7. The test-retest method was employed as a reliability check.

Likert-Type Statements and Method

Likert-type statements were judged to be most appropriate for the study because of their ease of administration and scoring. Selltiz, Johoda, Deutsch, and Cook (1968) reported that the Likert pattern has been the most frequently used method in studies of social attitudes. Likert (1967) first described his technique for scaling in 1932 after the Thurstone technique had been devised. Likert proposed that his method of attitude scaling was faster, equally or more reliable, and

equally or more valid than the Thurstone method. Seiler and Hough (1970) reviewed the only eight articles to be found which presented direct empirical comparisons of the two methods (Likert and Thurstone). They concluded that the Likert method of scoring an attitude scale of any given number of items consistently produced more reliable results than the Thurstone method of scoring the scale. Sherif and Sherif (1969) also confirmed the wide-spread use and adaptability of the Likert technique of measuring attitudes. The rationale and the procedure for the construction of statements and alternative responses, which this writer adopted, are described below by Sherif and Sherif (1969):

> The subject is asked to choose one alternative (e.g., from "Strongly Approve" to "Strongly Disapprove") for each statement. Thus, each item in the test is a rating device designed to reveal both the direction of the individual's stand on the issue and the intensity with which he holds it. The number below each alternative is the score value for that choice. . . . the higher value indicates a "pro" stand and low value indicates an "anti" stand (pp. 371-372).

For the present scaling process, six alternatives were used to indicate the degree of favorableness toward physical activity. A neutral response category was not provided, but the possibility of having no opinion was allowed by stating in the instruction that the subject should leave the question blank if he had no opinion. Few subjects used this prerogative. Research has continually attempted to determine the effect of various types of response categories. Finn (1972) recently conducted a study to determine the reliability of a number of alternatives and found that the optimum number of alternatives and found that the optimum number of alternatives was seven. Finn also determined that writing on the questionnaire both the numerical value of the alternative and the description produced the best results. The latter suggestion

was utilized in this research, but the use of seven response alternatives was not used since data were collected before Finn's publication.

Twenty-two of the forty preliminary items designed to measure the degree of favorableness toward physical activity in this study were stated positively; i.e., these items were phrased such that degrees of agreement were believed to indicate degrees of favorableness. The alternatives provided for these items were: Very strongly agree - 6, Strongly agree - 5, Agree - 4, Disagree - 3, Strongly disagree - 2, Very strongly disagree - 1. Items which were negatively stated were accompanied by the same alternatives but numbered in reverse order. This would mean that when the statement was believed to denote a negative feeling the numbering of the alternatives, as presented on the inventory, was reversed (i.e., VSA - 1, SA - 2, A - 3, D - 4, SD - 5, VSD - 6). By this method a respondent who wished to express a favorable response toward a negative statement would indicate some degree of disagreement. Eighteen of the forty items were stated negatively. Thus, respondents who wished to express favorable responses to these items would indicate some degree of disagreement. The use of both positive and negative items was designed to control for one kind of response set. Past research has found a response set to be one whereby people tend to agree more with positive statements than to disagree with negative ones (Carr, 1971). Such a response set can be controlled by including both positive and negative items. The control of other kinds of response sets was attempted by distributing the sequence of items on the questionnaire by a Table of Random Numbers.

For each subject a total score was obtained by a computer summation of his scores for the individual items. An average was then computed

for each subject based on the number of items actually answered. This mean score provided a score based on the number of items the subject could actually indicate as the representative opinion of his feelings at the time.

Selection of Items

A large number of statements which appeared to indicate attitudes toward physical activity were carefully examined. These statements were collected from other tests, current periodicals, books, and from empirical observation of different viewpoints pertaining to the issue in question.

The informal criteria for evaluating attitude statements suggested by Edwards (1957) were applied, and 40 items were chosen to be included in the initial questionnaire. Specifically, Edward's informal criteria are:

1. Avoid statements that refer to the past rather than to the present.
2. Avoid statements that are factual or capable of being interpreted as factual.
3. Avoid statements that may be interpreted in more than one way.
4. Avoid statements that are irrelevant to the psychological object under consideration.
5. Avoid statements that are likely to be endorsed by almost everyone or by almost no one.
6. Select statements that are believed to cover the entire range of the affective scale of interest.
7. Keep the language of the statements simple, clear and direct.
8. Statements should be short, rarely exceeding 20 words.
9. Each statement should contain only one complete thought.

10. Statements containing universals such as all, always, none, and never often introduce ambiguity and should be avoided.

11. Words such as only, just, merely, and others of a similar nature should be used with care and moderation in writing statements.

12. Whenever possible, statements should be in the form of simple sentences rather than in the form of compound or complex sentences.

13. Avoid the use of words that may not be understood by those who are to be given the completed scale.

14. Avoid the use of double negatives (pp. 13-14).

Two Samples

The 40-Item Attitude Toward Physical Activity Inventory was administered to 164 students enrolled in agricultural economics classes and sociology classes during the fall semester of 1971 at Oklahoma State University. It was projected that the majority of the 164 students would not be enrolled in a physical education class at that time. This sample was used to avoid selecting a set of items which might scale only for students involved in a physical activity class. A second sample, of 300 students, was obtained by means of a random assignment from 1547 students who answered the questionnaire in their physical education activity classes. The random assignment was accomplished by drawing a number between 0 and 9 from a hat to designate the last digit of the student identification number. All of the data from this initial questionnaire were converted to computer cards by professional key punch operators at the Oklahoma State University Computer Center. The computer cards for physical education classes (the 1547 sample) were placed in a sorter and the student numbers ending in a nine identified the 300 subjects whose questionnaires would be analyzed.

Item Analysis

The 40 items on the attitude scale were statistically analyzed in order to eliminate items that did not correlate highly with the total scores (see Table I). The internal-consistency method of item-analysis identified by Oppenheim (1966) computes a correlation coefficient for each item with the total score minus the score for the item in question. Fifteen items for the final questionnaire were selected by this method. Oppenheim, in referring to this method of constructing the best available measure of attitude without an external criteria, stated: ". . . the items will at least be consistent and homogeneous--they will all be measuring the same thing--and the scale may possibly also be valid" (p. 138).

Correlation coefficients were produced by the computer for the sample of 164 on the 40-item inventory, for the sample of 300 on the 40-item inventory, and for the sample of 300 on the final scale of 15-items. Table I shows the correlation coefficients for each of the items in the three situations.

Of the 40 items, those with the highest correlations and with reasonably similar correlations for the first two samples were selected for the final scale. In some instances, two or more items were equally acceptable. These equally acceptable statements were then examined for content. An attempt was made to select from among these items those which would provide the greatest variety in content for the final scale. Items pertaining to social aspects of physical activity, for example, were kept to four although there were six acceptable items of this kind. Other content variables represented in the final scale were the mental,

TABLE I

INTER-ITEM CORRELATION COEFFICIENTS:
INITIAL AND FINAL SCALES

Item Number	Initial 40 Items		Final 15 Items
	164 Sample	300 Sample	300 Sample
1	.48	.49	
2	.38	.42	
3	.58	.52	.52
4	.38	.38	
5	.43	.39	
6	.50	.42	
7	.54	.50	.48
8	.53	.58	.58
9	.64	.57	.62
10	.54	.52	.51
11	.44	.34	
12	.60	.60	.59
13	.45	.44	
14	.49	.44	
15	.14	.23	
16	.41	.52	.52
17	.41	.46	
18	.52	.41	
19	-.10	-.05	
20	.42	.30	
21	.51	.59	.61
22	.55	.57	.57
23	.34	.30	
24	.57	.51	.51
25	.50	.53	.53
26	.57	.60	.60
27	.53	.58	.60
28	.51	.49	
29	.29	.24	
30	.46	.55	.49
31	.20	.05	
32	.54	.52	
33	-.05	-.08	
34	.40	.54	.50
35	.50	.46	
36	.51	.49	
37	.21	.18	
38	.36	.57	
39	.31	.49	
40	.42	.33	

physical, aesthetic, and emotional dimensions. The final scale of 15 items had high inter-item correlational coefficients (r = .48 to .62), a seven-to-six ratio of positive and negative statements and at least five content variables. The internal consistency provided by the inter-item analysis and the thorough investigation of the 15 items for relativity and content were utilized to check for validity of the scale.

Reliability (Test-Retest)

The importance of establishing reliability has been pointed out by Green (1959): "Since attitude scales are developed as research tools for studying the relation of attitude to other variables, high reliability is an indispensable property of a scale" (p. 338). The Test-Retest method of establishing reliability was utilized for this study. A sample of 100 students from sociology classes took the final 15-item attitude scale during the 1972 spring semester at Oklahoma State University. The same attitude scale was readministered to the same students one week later. The reliability coefficient (Product Moment Correlation) between the total scores of the first administration of the attitude scale and the total scores of the second was .93. This is an unusually high correlation for a 15-item test-retest technique of attitude scaling and indicates that the subjects responded almost identically on the two occasions.

In the written and oral instructions for the questionnaire, the subjects were assured of anonymity. Kelman (1971) summarized the importance of all of the foregoing procedural steps when he stated that:

> Methodological goals when attitudes are assessed by means of questionnaires may be accomplished by (1) the instructions and through the assurance of confidentialness or anonymity (2)

> the use of indirect and projective questions, and by the inclusion of a series of interrelated items in the questionnaire (3) by the use of a scaling device in the analysis of the data. They (the above) increase the investigator's ability to obtain rich and relatively undistorted information on which he can then base valid inference (p. 207).

Methodology

The Sample

For the purpose of this exploratory study, a large voluntary sample was employed. To study groups engaged in physical activity who would remain together long enough to generate and to regularize forms of social interaction, the physical education activity classes at Oklahoma State University were canvassed. For this study the classes included sexually segregated as well as integrated classes, ranging from freshmen through graduate and special students. Sixty-eight activity-type classes were being offered in the fall of 1971, presenting a variety of movement experiences, methods of teaching, and differing class structures.

A letter was sent to each of the teachers of the 68 classes explaining the purpose of the study, the instrument for securing the data, the kind of data to be collected, the approximate amount of time necessary, and the dates for completion (see Appendix C). Two questionnaires were to be distributed by the teachers, one during the first week of classes and the second during the last week of classes. A follow-up procedure was to be employed after the first questionnaire (see Appendix C). The possibility for a follow-up on the second questionnaire would depend upon whether it was administered during the final class meeting

or a few days earlier. The teachers were also asked to provide a skill success rating, based on a 0-9 scale, for each of their students during the final week of classes (see Appendix C).

Of the 68 classes, 21 different teachers volunteered a total of 50 of their classes for the study. This represented a variety of 26 different activities. After the administration of the initial questionnaire and the follow-up procedure for late enrollees and absentees, 1528 subjects comprised the original sample. The total enrollment for the university was 18,670. Consequently, the sample of 1528 included almost 9% of the student body. The sample in this study, however, was not intended to be any kind of representative sampling of Oklahoma State University. The description of the research sample and the student body are included to give the reader some idea of the type of sample researched. The composition of students in the first sample compared with the total university enrollment may be found in Appendix D.

During the course of the semester the composition of the classes changed due to the normal processes of students dropping classes, changing classes, changing names (women marrying), and withdrawing from the university. In addition to losing these subjects, other students were absent on the day of questionnaire administration or inadvertently failed to complete the final questionnaire. The final sample count consisted of 1300 students.

Administration of the Survey

The initial survey included the 40-Item Attitude Toward Physical Activity Inventory and demographic information (see Appendix A). The instructions explained the purpose and importance of the survey, the

need for each student to express his own personal opinion and to answer all of the questions. The questionnaire was designed in such a way that the teacher would not need to supply further information in order that each class would receive consistent treatment during the administration of the questionnaire. The students were asked to identify their papers by their name, class, course number, section, and physical education instructor. A set of instructions was given to each teacher which explained in detail the step-by-step procedure for administering the questionnaire (see Appendix C).

One part of the final questionnaire (see Appendix B) elicited a rating on a 0-9 scale from each student which would correspond to his own feelings about his skill success or accomplishment. The teachers were requested to stress that they, the teachers, would not be seeing these ratings nor any part of the questionnaire; and that there would be no way for these ratings to influence the teacher nor to affect the grade for the course. Likewise, the teachers were asked to supply a list of students for their classes and a skill success rating for each student on the same 0-9 scale. Skill success was not defined for the student nor for the teacher. In each instance, the individual was to draw from his own experience and criteria what to him seemed to constitute skill success. Common criteria for rating skill success were not imposed on the raters. Specified standards would not have been in keeping with the spirit of this research in which the natural setting rather than an artificial or experimental setting was essential to experiential learning. A check was made to determine whether the two ratings did correlate. A Person Product-Moment Correlation was computed between a randomly selected sample of 300 student and teacher ratings

which yielded an "r" of .43. This is a statistically significant "F" at the .05 level, which is high enough to suggest substantial overlap of the two scales but also low enough to indicate considerable independence.

For the final questionnaire, it was essential for students to be able to identify other members of the class by name. A pilot study was undertaken by the writer in four of her classes to determine what some of the problems for making these identifications might be. In the pilot study, students were asked to learn names of all the class members. Then, a week later, they were asked to identify by name, in a paper-pencil test, the expressive and the instrumental class leaders, if they felt some people had indeed demonstrated the described characteristics. On the average, five or six students in each class requested certain names of class members from the writer. It was then decided that the writer would discuss with each instructor the problems of identifying by name certain members of the class. Each teacher devised a plausible method for their students to make the identifications. The most frequently used method was a name tag for each student. Also, during the administration of the questionnaire, the teacher and the assistants identified students when requested. Because the students were supplying somewhat personal and confidential information about their teachers and classmates, a form of privacy was insured. The teachers were asked to explain the procedure to the class before distributing the questionnaires; then they were to have a student collect the completed questionnaires and seal them in the large envelope which had been provided. The envelopes were to be delivered directly to this writer by the teacher.

Identification numbers corresponding to those used on their original questionnaires were written on the final questionnaires by the researcher for accurate identification and computer card use.

Error Check

After the information from both questionnaires had been converted on to computer cards, the surveys were stored in a safe place so that no future association of names could be made. The initial key punching was performed by professionals in the computer center. The final key punching was accomplished by the writer and four volunteers under the supervision of the writer. An error check verification was processed through the verifying machine by the writer on the initial deck of cards. No errors were discovered in these cards although there was the potential for 5,925 errors to be made. On the final key punching process, spot checks for verification were carried out both on the verifier and visually. A negligible number of errors was discovered and corrected from this rather extensive investigation. Another check for accuracy was made from the class lists provided by each teacher for his classes. The lists included teacher skill rating scores for all of the students who had completed the course. Original class lists were obtained from the computer cards which were provided by the University to teachers as the official class rosters. Student identification numbers were indicated on these official lists.

A further check for errors in the sample composition was required to match student identification numbers with the University's revised official class roster and the class rosters provided from the teacher lists and data from the final questionnaire. A third card was printed

by the computer which matched identification numbers from the initial data cards and the final data cards. The third card also printed the computation from the initial as well as the final data. These computations included the mean difference scores between the initial and final attitude scale scores, the leadership role data, and the skill-success data. Cards with incorrect or non-matching identification numbers were rejected. These cards were then traced back to the original data by the writer for correction. Cards with other missing data were also corrected (or rejected when correction was not possible through this process). Many of the "human errors" were discovered by the computer which made it possible to obtain more accurate data for analysis.

Method of Statistical Analysis

The purpose of this section is to describe the statistical analysis of the data. Responses from the two questionnaires yielded raw scores which could be logically and conveniently dichotomized into 2 x 2 contingency tables. The Chi Square test was selected to test whether these sets of scores, in their break-down of frequencies, could likely have occurred under the null hypothesis. The following is an example of a 2 x 2 contingency table presented by Siegel (1956). The cells in the chart below show the form used in this study.

The cell frequencies (A, B, C, and D) were obtained by dividing the responses of the students to the questionnaire items into high or low categories. Frequencies for the leadership roles met the "high" requirement when students identified at least one of the specified leaders and "low" frequencies were obtained when no leaders were identified. Frequencies for "high favorableness" of attitude indicated the group of

students who scored above the attitude scale median and the "low" frequencies fell below the attitude scale median. Skill success ratings were "high" if they fell above the computed median or "low" if they fell below the computed median.

TABLE II

TWO BY TWO CONTINGENCY TABLE FORM

	Independent Variables	
Dependent Variables	Low	High
High	A	B
Low	C	D

The cells represent all four possible combinations for highs and lows. Table III illustrates the cell compositions for frequencies represented in Hypothesis I, i.e., individuals who identify at least one student "expressive" leader will not be significantly different from individuals who fail to identify student "expressive" leaders on the attitude favorableness variable. Cell A contains "low student expressive" identifiers and "high favorableness" students denoted in percentages. Cell B contains "high student expressive" identifiers and "high favorableness" students denoted in percentages. Cell C contains "low

student expressive" identifiers and "low favorableness" students denoted in percentages. Cell D contains "high student expressive" identifiers and "low favorableness" students denoted in percentages.

TABLE III

FOUR-FOLD TABLE SAMPLE FOR HYPOTHESIS I - (a)

	Low	High
	A	B
High	Percent of students who did not identify a student "expressive" leader, but scored above the median on attitude favorableness	Percent of students who identified at least one student "expressive" leader, and scored above the median on attitude favorableness
	C	D
Low	Percent of students who did not identify a student "expressive" leader, but scored below the median on attitude favorableness	Percent of students who identified at least one student "expressive" leader, and scored above the median on attitude favorableness

Techniques for presenting and analyzing the data were supplied by the "BMDO 2S - Contingency Table Analysis - Version of June 15, 1966, Health Science Computing Facility, UCLA, H 3478" program. The program was run at the Oklahoma State University Computer Center. The computations for dichotomizing the data into "high" and "low" categories for each of the variables were supplied as a result of preparing the percentage tables and computing the Chi Square statistic.

As Table IV illustrates, the mid-points or in most cases the medians differed depending upon the unit of analysis and the variable. The student and teacher categories under the individual analysis were divided according to whether or not at least one leader was identified. The decision to split the "low" and "high" groups at 0 (no leader identified) and 1-9 (at least one leader identified) with the individual as the unit of analysis was based on the available literature which suggested that there was not a linear relationship between the number of leaders and task performance. The primary difference was found to be between no leader and at least one leader. With the classes as the unit of analysis, it was necessary to concentrate upon a group rather than an individual characteristic. Since individuals selected the leaders, the classes were divided into "low" and "high" categories at the median number of members who identified at least one leader. All other variables were divided at the representative median.

Blalock (1960), Siegel (1956), and Runyon and Haber (1967) stated that when the research data consist of frequencies in discrete categories, the Chi Square Test may be used to determine the statistical significance of the differences between two independent groups. The Chi Square values provided by Guilford (1965) specified a X^2 value, with one degree of freedom, of 3.841 to be significant beyond the .05 level, and a X^2 of 6.635 to be significant beyond the .01 level, and a X^2 of 10.827 to be significant beyond the .001 level of confidence.

In addition to testing for statistically significant differences with the Chi Square, the Yule's Q statistic was selected to measure the degree of strength of a relationship. Davis (1971) explained that with regard to Q values, "correlation" and "relationship" are words that are

TABLE IV

MID-POINTS AND RANGES UTILIZED FOR DICHOTOMIZING THE VARIABLES

Variables	Mid-Point	Range
	Individual	
Student Leadership Roles	1	0 to 9.00
Teacher Leadership Roles	1	0 to 2.00
Attitude Favorableness	.28	-6 to +6
Student-Rated Skill Success	6.48	0 to 9.00
Teacher-Rated Skill Success	6.84	0 to 9.00
	Between Classes	
Student "Expressive" Leaders	.52	.05 to .93
Student "Instrumental" Leaders	.44	0 to .90
Student "Dual" Leaders	.23	0 to .74
Teacher "Expressive" Leaders	.63	.11 to 1.00
Teacher "Instrumental" Leaders	.84	.35 to 1.00
Teacher "Dual" Leaders	.58	.11 to 1.00
Attitude Favorableness*	.28	.04 to .58
Student-Rated Skill Success	6.01	4.06 to 7.85
Teacher-Rated Skill Success	6.79	5.00 to 8.33

*See Appendix F for the class mean differences.

synonyms for association. The Yule's Q provided a descriptive measure for 2 x 2 tables which summarized the relationship in a manner that allowed for comparisons among several relationships and for conclusions concerning which was the strongest. However, the Q statistic is not sensitive to the increasing of N (the number) in the manner that Chi Square is affected. When a sample is small (i.e., for this study N = 50 for the classes while N = 1300 for individuals) a much more striking relationship is required to obtain statistical significance. The Yule's Q, or Kendall's Q as identified by Blalock (1960), is a more appropriate

measure for this study since it is less affected by differing sample sizes.

The skill success variables from the teacher's and the student's ratings were divided into cells depending upon whether the students fell above or below the median of the total group. The Q coefficient was computed on a calculator by the writer from the percentage tables supplied by the computer. A most succinct statement depicting Q may be an example from this study utilizing the interpretation guide by Davis (1971):

> A Q value of .64 means that we would do 64% better than chance if we always predict that classes high in identifying student instrumental leaders are also high in rating themselves in skill success or that classes low in identifying student instrumental leaders are also low in rating themselves in skill success.

The appropriate phrases used in this study to indicate strength of association, correlation, and relationship were formulated by Davis (1971, p. 49) and are reproduced in Table V.

TABLE V

CONVENTIONS FOR DESCRIBING Q VALUES

Value of Q	Appropriate Phrase
+.70 or higher	A very strong positive association
+.50 to +.69	A substantial positive association
+.30 to +.49	A moderate positive association
+.10 to +.29	A low positive association
+.01 to +.09	A negligible positive association
.00	No association
-.01 to -.09	A negligible negative association
-.10 to -.29	A low negative association
-.30 to -.49	A moderate negative association
-.50 to -.69	A substantial negative association
-.70 or lower	A very strong negative association

CHAPTER IV

PRESENTATION AND ANALYSES OF DATA

Introduction

This chapter presents analyses of the data as they relate to each of the hypotheses. Both statistical and literal analyses will be applied to the data. Statistical tests were employed to test for no significant difference between "high" and "low" leadership role identifiers on (a) favorableness toward physical activity, (b) student-rated skill success, and (c) teacher-rated skill success. Levels of probability, statistically significant beyond the .05 level of confidence, will be reported. The raw data reported in percentages, the levels of probability, Chi Squares, and Q values are presented in tabular form (see Tables VI-XVII).

Table XVIII delineates prominent Q values, at .30 or above, and levels of confidence at .05 or beyond for the purpose of viewing the stronger relationships and the statistically significant correlations. Comparisons of and a quick review of the more positive findings may be made more expediently when the more apposite results are ferreted out from among the twelve data analysis tables. The final feature of this chapter presents descriptions of associations from the Q values which are grouped into related blocks of three or nine common characteristics. These blocks of findings possess similarly fortified associations (See Table XIX). Each block is ranked in a hierarchy according to the

analogies among the numerical Q values. The rank ordering of these blocks supplied the discriminatory evidence for discussing pertinent issues in the study. Due to this research design and the fact that this was a correlational study, no attempt was made to establish test cause and effect theory.

Results of the Hypotheses Tested

The format for this section will be to formally state each hypothesis, to formally discuss the statistical acceptance or rejection as well as the strength of the association, to translate this formality into common language, and to suggest meanings or interpretations of the findings.

The Individual as the Unit of Analysis--Expressive, Instrumental and Dual Student Leadership Roles

Hypothesis I: Individuals who identify at least one student in the "expressive" leadership role will not be significantly different from individuals who fail to identify student "expressive" leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

Table VI shows that Hypothesis I was accepted for attitude favorableness ($X^2 = 1.26$) which was negligibly positive in degree of association; this null hypothesis was also accepted for the third dependent variable, teacher-rated skill success ($X^2 = 1.97$), which had a negligibly positive association. The null hypothesis for student-rated skill success was rejected ($X^2 = 20.97$), but was only low positive in strength of association. In summary, a statistically significant relationship was not established between student "expressive" groups and attitude

TABLE VI

DATA ANALYSIS OF STUDENT EXPRESSIVE LEADERS BY INDIVIDUALS AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Individuals Identifying: No (SE) (N = 627)	Individuals Identifying: From 1 to 9 (SE) (N = 673)
Favorableness of Attitude	(In Percentages)	
High	45.8	48.9
Low	54.2	51.1
	X^2 = 1.26	p < .30
	Q = .06	negligibly positive
Skill Success by Student		
High	47.2	59.9
Low	52.8	40.1
	X^2 = 20.97	p < .001
	Q = .06	low positive
Skill Success by Teacher		
High	59.6	63.4
Low	40.4	36.6
	X^2 = 1.97	p < .20
	Q = .08	negligibly positive

favorableness, or between student "expressive" groups and teacher-rated skill success. But students who identified at least one student "expressive" leader had higher than average student-rated skill success. It may be that student "expressive" leaders foster skill success as determined by the individual's self-evaluation.

Throughout this chapter, it may be seen that the associations were consistently stronger between leadership roles and student-rated skill success than between leadership roles and teacher-rated skill success (most of these resulted in negative associations--see Table XVIII). It was not the purpose of this writer to ascertain in this study whether the teacher and the student were using the same criteria for rating skill success or motor skill acquisition, although it is possible that the teacher supplied an extrinsic measure while the student provided an intrinsic measure of skill success. Tables VI, VII and VIII provide additional evidence that the student's evaluation correlated better with the socialization objective than did the teacher's ratings.

Hypothesis II: Individuals who identify at least one student in the "instrumental" leadership role will not be significantly different from individuals who fail to identify student "instrumental" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

Table VII shows that Hypothesis II was accepted for attitude favorableness (X^2 = .66) and was negligibly negative in association; it was also accepted for teacher-rated skill success (X^2 = .08) which was a negligibly positive association. But the student "instrumental" hypothesis was rejected for student-rated skill success (X^2 = 28.71) with a moderately positive association (see Table VII). A statistically significant relationship was not established between student

TABLE VII

DATA ANALYSIS OF STUDENT INSTRUMENTAL LEADERS BY INDIVIDUALS AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Individuals Identifying: No (SI) (N = 736)	Individuals Identifying: From 1 to 9 (SI) (N = 564)
Favorableness of Attitude	(In Percentages)	
High	48.4	46.1
Low	51.6	53.9
	X^2 = .66	p < .50
	Q = -.05	negligibly negative
Skill Success by Student		
High	47.3	62.2
Low	52.7	37.8
	X^2 = 28.71	p < .001
	Q = .30	moderately positive
Skill Success by Teacher		
High	61.3	62.1
Low	38.7	37.9
	X^2 = .08	p < .80
	Q = .02	negligibly positive

"instrumental" groups and attitude favorableness or teacher-rated skill success. But students who identified at least one student "instrumental" leader had higher than average student-rated skill success. It may be that student "instrumental" leaders encourage skill recognition by students.

When students identified another in the "instrumental" leadership role, they were recognizing a highly skill-oriented person who was knowledgeable and capable of improving the skill level of others. It may be pertinent to note that the largest association coefficient found in the study under the individual (as the unit of analysis) emerged in the relationship between the student "instrumental" leadership role and the student-rated skill success. This may be interpreted to mean that student interaction is more likely to occur between highly skilled students and students who rate themselves in the "higher than average" skill success category.

Hypothesis III: Individuals who identify at least one student in the dual leadership role will not be significantly different from individuals who fail to identify a student in the dual leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

Table VIII reveals that Hypothesis III was accepted for attitude favorableness (X^2 = .006) which had no association. It was rejected for student-rated skill success (X^2 = 15.09) which had a low positive association; and the null hypothesis was also rejected for teacher-rated skill success (X^2 = 4.40) which had a low positive association. A statistically significant relationship was established between the student dual leadership variable for both of the skill success ratings

TABLE VIII

DATA ANALYSIS OF STUDENTS IN DUAL LEADERSHIP ROLES BY INDIVIDUALS AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Individuals Identifying: No (SD) (N = 1010)	Individuals Identifying: From 1 to 9 (SD) (N = 290)
Favorableness of Attitude	(In Percentages)	
High	47.3	47.6
Low	52.7	52.4
	X^2 = .006	p < .90
	Q = .005	no association
Skill Success by Student		
High	50.9	63.8
Low	49.1	36.2
	X^2 = 15.09	p < .001
	Q = .26	low positive
Skill Success by Teacher		
High	60.1	66.9
Low	39.9	33.1
	X^2 = 4.40	p < .05
	Q = .15	low positive

but not for attitude favorableness. Students who identified at least one student leader in the dual role had higher than average skill success ratings from himself and from his teacher. There may be evidence here to support the consideration that student leaders in dual capacities facilitate skill development.

The student dual leadership role signified that a student was named as both an "expressive" and an "instrumental" leader. It is not intended when reference is made to this dual role (student and/or teacher) that a "real" dual role leader was established, but merely that this role was identified by certain students in this study. Since the student dual leadership role was found to relate to both measures of skill success, this may indicate that when leadership roles are allowed to emerge from within a group, the emergence of a student leader capable of exemplifying both leader-type qualities of "expressiveness" and "instrumentalness" will interact extensively with students with high skill development by either criteria.

Physical Education Activity Classes as the Unit of Analysis--Expressive, Instrumental, and Dual Student Leadership Roles

Hypothesis IV: Classes which are above the median in student "expressive" leadership roles will not be significantly different from below-median classes in student "expressive" leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

This hypothesis was accepted for attitude favorableness ($X^2 = 2.98$), but was moderately positive in association; teacher-rated skill success was accepted ($X^2 = 1.34$), but was moderately negative in association; student-rated skill success, however, was rejected ($X^2 = 3.89$) and was

substantially positive in association (see Table IX). A statistically significant relationship was not established between student "expressive" classes and attitude favorableness or teacher-rated skill success. In classes where there was at least one student "expressive" leader being identified by a large number of class members, higher than average student-rated skill success resulted. It may be true, then, that the student "expressive" leaders foster higher self-evaluations in skill development.

When classes represented the unit being analyzed, the association coefficients calculated between student "expressive" leadership and the three dependent variables, attitude favorableness (Q = .46), student-rated skill success (Q = .52), and teacher-rated skill success (Q = -.32) provided the only hypothesis resulting in moderate and higher associations throughout. Although the moderately negative Q value indicated a reverse relationship, the dependent variables were influenced most by classes with "expressive" student leaders. The reverse relationship means one would do 32% better than chance to predict that above-median classes were "low" in teacher-rated skill success.

Hypothesis V: Classes above the median in student "instrumental" leadership roles will not be significantly different from below-median classes in student "instrumental" leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

This hypothesis was accepted for teacher-rated skill success (X^2 = .0005), and no association existed; student-rated skill success was rejected (X^2 = 6.56), and was substantially positive in association; favorableness of attitude was also rejected (X^2 = 5.06) and was

TABLE IX

DATA ANALYSIS OF STUDENT EXPRESSIVE LEADERS BY CLASSES AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Below Median (SE) (N = 24)	Above Median (SE) (N = 26)
Favorableness of Attitude	(In Percentages)	
High	33.3	57.7
Low	66.7	42.3
	$X^2 = 2.98$	$p < .10$
	$Q = .46$	moderately positive
Skill Success by Student		
High	37.5	65.4
Low	62.5	34.6
	$X^2 = 3.89$	$p < .05$
	$Q = .52$	substantially positive
Skill Success by Teacher		
High	62.5	46.2
Low	37.5	53.8
	$X^2 = 1.34$	$p < .30$
	$Q = -.32$	moderately negative

substantially positive. A statistically significant relationship was established between the student "instrumental" classes and each of the dependent variables, except in skill success rated by the teacher (see Table X). In classes where more subjects nominated a student "instrumental" leader than the median number for all classes, there was higher than average attitude favorableness and student-rated skill success. It may be that student "instrumental" leaders encourage both physical activity attitude favorableness and student perception of skill development.

The student "instrumental" variable may contribute more toward attitude favorableness than any of the other leadership variables because it related to attitudes more strongly than did any of the other leadership roles. It is also noteworthy that the strongest Q value (.64) obtained in the study occurred between the student "instrumental" variable and skill success rated by the student. Apparently, in this study, when classes were compared, some classes stressed student "instrumental" qualities more than others and this correlated strongly with classes which were above the median in student-rated skill success.

Hypothesis VI: Classes above the median in student dual leadership roles will not be significantly different from below-median classes in student dual leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

This hypothesis was accepted for attitude favorableness (X^2 = 1.15), but was moderately positive in association: the teacher-rated skill success part also was accepted (X^2 = .25), being low negative in association. Student-rated skill success was rejected (X^2 = 4.12) and was

TABLE X

DATA ANALYSIS OF STUDENT INSTRUMENTAL LEADERS BY CLASSES AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Below Median (SI) (N = 26)	Above Median (SI) (N = 24)
Favorableness of Attitude	(In Percentages)	
High	30.8	62.5
Low	69.2	37.5
	$X^2 = 5.06$	$p < .05$
	$Q = .58$	substantially positive
Skill Success by Student		
High	34.6	70.8
Low	65.4	29.2
	$X^2 = 6.56$	$p < .05$
	$Q = .64$	substantially positive
Skill Success by Teacher		
High	53.8	54.2
Low	46.2	45.8
	$X^2 = .0005$	$p < .98$
	$Q = .007$	no association

substantially positive in relationship. A statistically significant relationship was established between student dual leadership classes and the student-rated skill success (see Table XI). Classes which had a high number of the class members identify at least one student in the dual leadership role had higher than average attitude favorableness and also student-rated skill success. It would appear that student dual leadership roles foster skill success based on student assessment.

Much like three of the other hypotheses (I, II, and IV) concerning student leadership roles, Hypothesis VI confirmed the relationship between the identification of student leaders and student self-assessed skill success to be substantially positive. If this is true, then physical educators might investigate the possibility of promoting the socialization process as a means of assisting the individual toward feeling more competent in his mastery of physical skills.

The Individual as the Unit of Analysis--Expressive, Instrumental, and Dual Teacher Leadership Roles

Hypothesis VII: Individuals who identify at least one teacher in the "expressive" leadership role will not be significantly different from individuals who fail to identify a teacher in the "expressive" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

As revealed in Table XII, this hypothesis was rejected for attitude favorableness (X^2 = 15.01), but was low positive in association; student-rated skill success was also rejected (X^2 = 13.40) and found to be low positive in association; likewise, teacher-rated skill success was rejected (X^2 = 6.76) and was low positive in association. A

TABLE XI

DATA ANALYSIS OF STUDENTS IN DUAL LEADERSHIP ROLES BY CLASSES AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Below Median (SD) (N = 28)	Above Median (SD) (N = 22)
Favorableness of Attitude	(In Percentages)	
High	39.3	54.5
Low	60.7	45.5
	X^2 = 1.15	p < .30
	Q = .30	moderately positive
Skill Success by Student		
High	39.3	68.2
Low	60.7	31.8
	X^2 = 4.12	p < .05
	Q = .54	substantially positive
Skill Success by Teacher		
High	57.1	50.0
Low	42.9	50.0
	X^2 = .25	p < .70
	Q = -.14	low negative

TABLE XII

DATA ANALYSIS OF TEACHER EXPRESSIVE LEADERS BY INDIVIDUALS AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Individuals Identifying No (TE) (N = 487)	Individuals Identifying One (TE) (N = 813)
Favorableness of Attitude	(In Percentages)	
High	40.5	51.5
Low	59.5	48.5
	$X^2 = 15.01$	$p < .001$
	$Q = .22$	low positive
Skill Success by Student		
High	47.2	57.7
Low	52.8	42.3
	$X^2 = 13.40$	$p < .001$
	$Q = .21$	low positive
Skill Success by Teacher		
High	57.1	64.3
Low	42.9	35.7
	$X^2 = 6.76$	$p < .01$
	$Q = .15$	low positive

statistically significant relationship was established between teacher "expressive" leadership roles and all three dependent variables. Students who identified their teachers as an "expressive" leader were higher than average in attitude favorableness, and in skill success ratings by student and by the teacher. These findings may imply that when groups who identified teacher "expressive" leaders, they tended to reveal higher attitude as well as higher skill development.

The "expressive" teacher leadership role was the only independent variable in this study which showed a statistically significant relationship with all three of the dependent variables, yielding low strength Q values (.22, .21, and .15). The teacher "expressive" role when the individual was the unit being analyzed provided the largest Q values in the study.

Hypothesis VIII: Individuals who identify at least one teacher in the "instrumental" leadership role will not be significantly different from individuals who fail to identify a teacher in the "instrumental" leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

This hypothesis was accepted for both student and teacher-rated skill success (X^2 = 3.31 and X^2 = .04, respectively), but were low and neglibibly positive in association. Attitude favorableness was rejected (X^2 = 8.23), but was low positive in association (see Table XIII). A statistically significant relationship was not established between teacher "instrumental" groups and the two skill success ratings. Students who identified their teachers in the "expressive" leadership role, however, were higher than average in attitude favorableness. It

TABLE XIII

DATA ANALYSIS OF TEACHER INSTRUMENTAL LEADERS BY INDIVIDUALS AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Individuals Identifying	
	No (TI) (N = 218)	One (TI) (N = 1082)
Favorableness of Attitude	(In Percentages)	
High	38.5	49.2
Low	61.5	50.8
	$X^2 = 8.23$	$p < .01$
	$Q = .21$	low positive
Skill Success by Student		
High	48.2	54.4
Low	51.8	45.1
	$X^2 = 3.31$	$p < .10$
	$Q = .13$	low positive
Skill Success by Teacher		
High	61.0	61.7
Low	39.0	38.3
	$X^2 = .04$	$p < .90$
	$Q = .02$	negligibly positive

may be that teacher "instrumental" leaders, as identified by their students, encourage an improvement in attitudes toward physical activity.

The "instrumental" leadership role of the teacher was a better predictor of attitude favorableness than skill success. In the data concerning Hypothesis VII, the teacher "expressive" leadership role was found to be a better predictor of skill success than teacher "instrumental" roles which are skill-oriented. It would appear that the students who viewed their teachers as skill leaders were not necessarily skilled in the activity according to either their own standards or those of the teacher.

Hypothesis IX: Individuals who identify as least one teacher in the dual leadership role will not be significantly different from individuals who fail to identify a teacher in the dual leadership role on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

This hypothesis was accepted for teacher-rated skill success ($X^2 = 3.20$), but was low positive in association. Attitude favorableness was rejected ($X^2 = 13.01$), but was low positive in association; and student-rated skill success was rejected ($X^2 = 10.86$), but was low positive in association (see Table XIV). There was no statistically significant relationship between teacher dual leadership groups and skill success rated by the teacher. But students who identified the teacher in the dual leadership role had higher than average attitude favorableness and also student-rated skill success.

The teacher dual leadership role signifies that a student named his teacher in both the "expressive" and the "instrumental" leadership categories. Although the Q values yielded low positive associations for

TABLE XIV

DATA ANALYSIS OF TEACHERS IN DUAL LEADERSHIP ROLES BY INDIVIDUALS AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Individuals Identifying	
	No (TD) (N = 551)	One (TD) (N = 749)
Favorableness of Attitude	(In Percentages)	
High	41.6	51.7
Low	58.4	48.3
	$X^2 = 13.01$	$p < .001$
	$Q = .20$	low positive
Skill Success by Student		
High	48.5	57.7
Low	51.5	42.3
	$X^2 = 10.86$	$p < .001$
	$Q = .18$	low positive
Skill Success by Teacher		
High	58.8	63.7
Low	41.2	36.3
	$X^2 = 3.20$	$p < .10$
	$Q = .10$	low positive

the teacher dual leadership role, they were more consistent than the Q values for Hypothesis III in which there was no significant difference between the student dual leadership role and attitude favorableness.

Physical Education Activity Classes as the Unit of Analysis--Expressive, Instrumental, and Dual Teacher Leadership Roles

Hypothesis X: Classes above the median in teacher "expressive" leadership roles will not be significantly different from below-median classes in teacher "expressive" roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

This hypothesis was accepted due to low Chi Squares shown here: (a) attitude favorableness (X^2 = 2.57), but was moderately positive in association; (b) student-rated skill success (X^2 = .43), but was low negative in association; and (c) teacher-rated skill success (X^2 = 1.03), but was moderately negative in association (see Table XV). There was no statistically significant relationship between the teacher "expressive" classes, as identified by students, and the dependent variables listed above in Hypothesis X. In classes where the teacher was identified in the "expressive" role by a higher number of class members, there was lower than average attitude favorableness as well as lower than average student-rated and teacher-rated skill success.

The two units of analysis in this study, individual (N = 1300) and classes (N = 50), differ in statistical significance and strength of association (as revealed in Tables XII and XV) for the teacher "expressive" leadership role. The three dependent variables in Hypothesis VII were statistically significant with the teacher "expressive" role, but

TABLE XV

DATA ANALYSIS OF TEACHER EXPRESSIVE LEADERS BY CLASSES AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Below Median (TE) (N = 19)	Above Median (TE) (N = 31)
Favorableness of Attitude	(In Percentages)	
High	31.6	54.8
Low	68.4	45.2
	$X^2 = 2.57$	$p < .20$
	$Q = .45$	moderately positive
Skill Success by Student		
High	57.9	48.4
Low	42.1	51.6
	$X^2 = .43$	$p < .70$
	$Q = -.19$	low negative
Skill Success by Teacher		
High	63.2	48.4
Low	36.8	51.6
	$X^2 = 1.03$	$p < .30$
	$Q = -.30$	moderately negative

in Hypothesis X there was no statistical significance and a moderately positive and a moderately negative association were found.

Hypothesis XI: Classes above the median in teacher "instrumental" leadership roles will not be significantly different from below-median classes in teacher "instrumental" leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

This hypothesis was accepted due to low Chi Squares shown here: (a) attitude favorableness (X^2 = 1.52), but was moderately positive in association; (b) student-rated skill success (X^2 = .05), but was negligibly positive in association; and (c) teacher-rated skill success (X^2 = 1.62), but was moderately negative in association (see Table XVI). There was no statistically significant relationship between the teacher "instrumental" classes and the dependent variables listed above in Hypothesis XI. In classes where the teacher was identified in the "instrumental" role by a higher number of class members, there was lower than average attitude favorableness, student-rated and teacher-rated skill success. When classes were compared, the "instrumental" or skill-oriented teacher, as defined in the study, appeared to have been a positive factor in increasing attitude favorableness and a negative factor in developing a level of skill ranking in the higher ranges as perceived by the teachers. It would appear that the classes and students who rate themselves high in skill success do not correlate with teachers who are identified as being highly skilled in physical activity.

In both Hypotheses XI and XII, the relationships between the teacher leadership roles were moderately positive in attitude favorableness and moderately negative in teacher-rated skill success. The student-rated

TABLE XVI

DATA ANALYSIS OF TEACHER INSTRUMENTAL LEADERS BY CLASSES AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Below Median (TI) (N = 20)	Above Median (TI) (N = 30)
Favorableness of Attitude	(In Percentages)	
High	35.0	53.3
Low	65.0	46.7
	$X^2 = 1.52$	$p < .30$
	$Q = .36$	moderately positive
Skill Success by Student		
High	50.0	53.3
Low	50.0	46.7
	$X^2 = .05$	$p < .95$
	$Q = .07$	negligibly positive
Skill Success by Teacher		
High	65.0	46.7
Low	35.0	53.3
	$X^2 = 1.62$	$p < .30$
	$Q = -.36$	moderately negative

skill success variable was low negative and negligibly positive in the "expressive" and "instrumental" teacher roles, respectively.

Hypothesis XII: Classes above the median in teacher dual leadership roles will not be significantly different from below-median classes in teacher dual leadership roles on three dependent variables: (a) attitude favorableness, (b) student-rated skill success, and (c) teacher-rated skill success.

Table XVII shows that this hypothesis was accepted for attitude favorableness (X^2 = 2.15), but was moderately positive in association; student-rated skill success was accepted (X^2 = .35) and was low negative in association. Teacher-rated skill success was rejected (X^2 = 4.15) and was substantially negative in association. There was no statistically significant relationship between the teacher dual leadership classes and (a) attitude favorableness or (b) student-rated skill success. But in classes where the teacher was identified in the dual role more frequently than the median number for all classes, there was lower than average attitude favorableness and student-rated skill success. This suggests that when dual leadership roles are identified for the teacher there is a deemphasis on the development of skill as the teacher interprets skill success.

The low negative and the substantially negative associations between teacher dual leadership and the two skill success ratings for the classes indicated an inverse relationship. The strongest negative association in the study (Q = -.54) was established between the teacher dual leadership role and teacher-rated skill success. In other words, one would do 54% better than chance to predict that classes ranking above the median in the number of times the teacher was identified as

TABLE XVII

DATA ANALYSIS OF TEACHERS IN DUAL LEADERSHIP ROLES BY CLASSES AS RELATED TO ATTITUDE FAVORABLENESS, STUDENT-RATED SKILL SUCCESS, AND TEACHER-RATED SKILL SUCCESS

Dependent Variables	Below Median (TD) (N = 23)	Above Median (TD) (N = 27)
Favorableness of Attitude	(In Percentages)	
High	34.8	55.6
Low	65.2	44.4
	$X^2 = 2.15$	$p < .20$
	$Q = .40$	moderately positive
Skill Success by Student		
High	56.5	48.1
Low	43.5	51.9
	$X^2 = .35$	$p < .70$
	$Q = -.17$	low negative
Skill Success by Teacher		
High	69.6	40.7
Low	30.4	59.3
	$X^2 = 4.15$	$p < .05$
	$Q = -.54$	substantially negative

exemplifying both "expressive" and "instrumental" roles were rated "low" in skill success by that teacher.

From the correlations presented in Table XVIII, certain trends may be noted among the leadership roles and the dependent variables. Only moderate to substantial relationships (.30 to .64) are considered in this table. Because certain relationships were obviously strong, the possibility that an influence may have existed between corresponding variables might be considered. Based upon the method of identifying leaders or leadership roles within this study, evidence was presented which indicates: (1) student and teacher leadership roles were related to attitude favorableness when classes were compared. (2) The presence of student "instrumental" leaders was related to student-rated skill success when both classes and individuals were compared. (3) The presence of student "expressive" and dual role leaders were related to student-rated skill success when classes were compared. (4) Classes which identified teachers in the leadership roles tended to be rated "low" in teacher-rated skill success. (5) Classes which identified student "expressive" leaders tended to be rated "low" by the teacher in skill success. A Master Data Analysis Chart is presented in Appendix E for an overall view of the findings.

If probability alone were to be considered, the leadership roles of students were more consistently and frequently related to skill success ratings by students than were the other two dependent variables (see Table XVIII). When observing both the magnitude of associations and the probability, the most striking relationships stand out between (1) student "instrumental" leaders and favorableness of attitude and (2) all of the student leadership roles and skill success ratings by students

TABLE XVIII

Q VALUES AND LEVELS OF CONFIDENCE BETWEEN LEADERSHIP ROLES AND (A) ATTITUDE FAVORABLENESS, (B) STUDENT-RATED SKILL SUCCESS, AND (C) TEACHER-RATED SKILL SUCCESS

Variables	Individual						Between Classes					
	SE	SI	SD	TE	TI	TD	SE	SI	SD	TE	TI	TD
Q Values:												
Attitude Favorableness							.46	.58	.30	.45	.36	.40
Skill by Students		.30					.52	.64	.54			
Skill by Teacher							-.32			-.30	-.36	-.54
Probability:												
Attitude Favorableness				.001	.01	.001		.05				
Skill by Students	.001	.001	.001	.001		.001	.05	.05	.05			
Skill by Teacher			.05	.01					.05			

Key: SE--Student Expressive
SI--Student Instrumental
SD--Student Dual
TE--Teacher Expressive
TI--Teacher Instrumental
TD--Teacher Dual

when classes were compared. The student "instrumental" leaders appeared to have been the variable with the most consistent relationship with attitude favorableness toward physical activity and skill success as evaluated by the student.

Blocks of Findings and Interpretations

This chapter has thus far presented the relationships between the independent (three leadership roles) and the three dependent variables. In an attempt to present a more complete picture, further discussion will center around the dependent variables.

Although there were two test results for this study, Chi Square and Q coefficients, this discussion will be limited to the Q relationships as shown in Table XIX. Since there are two samples differing in size (N = 1300 for individual comparisons and N = 50 for class comparisons), the Q statistic represents a more consistent feature than the Chi Square because it is not sensitive to changes in the N (see discussion on page 50). By grouping some of the relationships into blocks, similarities and contrasts may be more readily observed.

The blocks of findings listed below will be arranged in the order of strengths of association:

Block 1--Each of the student leadership roles identified by the classes had substantially positive correlations with the student-rated skill success variable.

Block 2--The student "expressive" leadership role and the student in both leadership roles yielded a moderate but positive relationship while the student "instrumental" leadership role had a substantially

TABLE XIX

BLOCKS OF FINDINGS BY STRENGTH OF ASSOCIATIONS

Dependent Variables	Independent Variables											
	Student Leadership Roles						Teacher Leadership Roles					
	Individual			Between Classes			Individual			Between Classes		
	Expressive	Instrumental	Dual Roles	Expressive	Instrumental	Dual Roles	Expressive	Instrumental	Dual Roles	Expressive	Instrumental	Dual Roles
(a) Favorableness of Attitude	10* Negligible Positive	Negligible Negative	No Association	2 Moderate Positive	Substantial Positive	Moderate Positive	7 Low Positive	Low Positive	Low Positive	4 Moderate Positive	Moderate Positive	Moderate Positive
(b) Skill by Student	5 Low Positive	Moderate Positive	Low Positive	1 Substantial Positive	Substantial Positive	Substantial Positive	Low Positive	Low Positive	Low Positive	8 Low Negative	Negligible Positive	Low Negative
(c) Skill by Teacher	9 Negligible Positive	Negligible Positive	Low Positive	6 Moderate Negative	No Association	Low Negative	Low Positive	Negligible Positive	Low Positive	3 Moderate Negative	Moderate Negative	Substantial Negative

*Numbered Blocks of Findings

positive relationship with the favorableness of attitude toward physical activity in between-class comparisons.

Block 3--The teacher "expressive" and teacher "instrumental" leadership roles resulted in moderate but negative associations, and the teacher in both leadership roles had a substantially negative association when the class was the unit of investigation and the teacher-rated skill success was tested.

Block 4--Each of the teacher leadership roles showed a moderately positive correlation between classes with above-median attitude favorableness.

Block 5--One leadership role (student "instrumental") in the individual unit was moderate, but positive, in relation to student-rated skill success. The other two leadership roles (student "expressive" and student as both "expressive" and "instrumental") had low but positive associations with student-rated skill success.

Block 6--The student leadership roles in between-class comparisons with teacher-rated skill success showed moderately negative, no association, and low negative relationships, respectively, with "expressive," "instrumental," and dual roles.

Block 7--The largest block of findings encompassed all of the teacher leadership roles with the individual as the unit of analysis. This grouping yielded low but positive associations with attitude favorableness, student-rated skill success and teacher-rated skill success, except for a negligibly positive association for teacher "instrumental" leadership roles and teacher-rated skill success.

Block 8--There were low but negative correlations between teacher "expressive" leadership roles and teacher in both leadership roles and

This suggests that the teacher's role or leadership qualities, as seen by the students, may not have had the same influence on student-rated skill success as did the student leadership roles or it may even have had an influence in the opposite direction.

Another interesting variation may be found when comparing the teacher leadership roles with teacher-rated skill success and student leaders with teacher-rated skill success between classes. From the findings in Block Three, the associations were moderate and substantial but in the negative direction between teachers as leaders and skill success ratings by teachers. The leader-identified teachers would seem to relate better to classes with students whom the teacher rated lower in skill success. Classes may have been expressing a relationship of high identification with the teacher as a physically skilled, knowledgeable, socially reinforcing leader, although the students from these classes were at the same time being rated in the lower half by the teacher-rated skill success. Block Eight also reveals that the student ratings of skill success were not much stronger when compared between classes with the teacher leadership roles. The teacher leadership image, as defined in this study, may not provide a very potent influence for the student attaining what he feels the skill success objective is in physical education activity classes. Along this line of reasoning, when comparing classes, we find in Block Six negative low and moderate associations or no association. Classes with an above average number of student leaders correlated to the classes which were rated "low" in teacher-rated skill success or they did not correlate at all. Examination of Blocks One and Six reveals that within classes, student leaders correlate better with "high" student-rated skill success than with "high"

skill success ratings by students in between-class comparisons. The teacher "instrumental" leadership roles in this block resulted in a negligible but positive relationship.

Block 9--Negligible but positive relationships existed between student "expressive" and student "instrumental" leadership roles with teacher-rated skill success when individuals were compared. A low but positive relationship was found in this block between students in dual leadership roles and teacher-rated skill success.

Block 10--The final block provided the broadest range of variables between student leadership roles and attitude favorableness when the individual was the unit of analysis. Student "expressive" leadership role was negligible but positive; student "instrumental" leadership role was negligible but negative; and the student in both leadership roles showed no association.

The first block of findings revealed the only consistent, substantially positive associations within the ten blocks. Classes which identified student leaders of any of the three types tended to rate themselves, as a class, substantially higher in skill success. It might be predicted then that high identification of student leadership roles and high student-rated skill success would tend to be found together in physical activity classes. Students in classes who identified fellow student leaders appeared to have high self-evaluations in skill success. The evidence of leadership characteristics in fellow students as seen by their peers may be a factor in determining how students perceive their ability to succeed in physical activities. By way of contrast, the teacher leadership roles in Block Eight revealed low negative or negligible and low positive associations with student-rated skill success.

teacher-rated skill success. One possible explanation may be that students rate skill success differently than teachers. It may be noted in Blocks Three and Eight that the teacher-leaders correlate almost totally with the lower skill-rated students regardless of whether the ratings were by students or teachers (exception: teacher "instrumental" and student-rated skill success).

The associations in Block Two were both substantial and moderate, though positive in direction. Classes which identified an above average number of student leaders correlated strongly with attitude favorableness. Based upon strength of associations, the student leader-attitude favorableness relationships ranked second only to the student leader/student-rated skill success relationships. This may tend to indicate that identification of student leadership influences a positive attitude toward physical activity. The strongest positive relationships established in the study involving teacher leadership roles were in connection with attitude favorableness (see Table XIX, Block Four). It appears that in the between-class comparisons, the teacher leaders, as identified by students, may have been more influential on the attitude toward physical activity than in affecting skill success.

Blocks Five, Seven, Nine, and Ten deal with the associations formed when the individual subjects comprised the unit being analyzed. The terms "leader" and "leadership roles" used throughout this study refer specifically and exclusively to those students and teachers who were identified according to the definitions listed previously for "expressive" and "instrumental" roles. One moderately positive and two low relationships were established between student leaders and student-rated skill success. The weakest relationships by comparison of individuals

were found between student leadership roles and attitude favorableness. The student leadership role recognized by individuals does not appear to make much difference in whether attitude favorableness was "high" or "low." All of the other individual comparisons are low but positive. Weaknesses of relationships in these blocks between leadership roles and the dependent variables appear to suggest that these roles have no influence on either attitudes or skills.

The most striking findings were revealed in the relationships between student leadership roles and attitude favorableness and with student-rated skill success with all of the associations being moderate to substantial. The teacher-rated skill success variable seemed to be affected by teacher and by student leadership roles to a lesser and sometimes a more negative degree than the student-rated skill success variable.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The problem investigated in this study concerned the nature of relationships between (1) leadership roles portrayed by teachers, as identified by students, (2) leadership roles portrayed by students, as identified by peers, in college physical education activity classes, (3) attitude favorableness toward physical activity, and (4) skill success. The findings from the collected data have been analyzed and interpreted. At this point, the results will be summarized, tentative inferences will be made, and recommendations will be suggested for further study.

In past research dealing with leadership roles and group effectiveness, the method for selecting leaders, the identification of distinct and specific roles, the purpose for forming groups and the ultimate goal of the groups, the duration of the group interaction (period of time), and the size of the groups were somewhat limited or controlled. The intent of this study was to examine relationships in an educational setting, and in groups which were naturally formed and limited in size only by the classes. Two task specific roles were defined for the consideration of each student participating in the study. Students could identify one or more fellow class members, their teacher, a combination of fellow class members and the teacher, or no one as exemplifying the characteristics described for the role of "expressive"

and "instrumental" leaders. The "expressive" or socially supportive role dealt with the affective domain and the "instrumental" or skillful and knowledgeable role dealt with the psychomotor and cognitive domains. Attitude change toward physical activity and student and teacher assessment of student skill success were utilized as measures of group and individual effectiveness. The favorable attitude change was used as an affective measure and the skill success was used as a measure of psychomotor achievement, providing at least two dimensions of development. On the basis of statistical analysis of the data, the following represents a summary of the findings:

1. Students did recognize and identify both "emergent" (fellow students) and "designated" (the teacher) leaders as these concepts were defined in other studies.

2. The findings made it evident that more than one leader was identified from among both students and teachers within a physical education activity class.

3. Specific functional (skill and social) leadership roles were identified as being specific to the task at hand.

4. Leadership roles (expressive and instrumental) were identified and were found to be statistically significant in relationship to dependent variables when natural groups were engaged in physical activity.

5. The possibility for dual leadership roles (individuals identified as being both expressive and instrumental) existing was verified.

6. The "expressive" leadership roles were not related either by statistical significance and/or by strength of association, exclusively to the broad diffuse, affective, and personally satisfying ends

indicative of attitude favorableness, but were, in some instances, related to student self-skill ratings and teacher skill ratings.

7. The "instrumental" leadership roles were not related to skill ratings exclusively, but were in some instances related to the affective goal of promoting favorable attitudes.

In summarizing the findings of significant differences between the independent and the dependent variables, findings are listed under two headings in order to distinguish between the two separate units of analysis. The individual student responses were compared and the collective class responses were compared. The following conclusions were drawn from the tested results of the null hypotheses.

Individual as the Unit of Analysis

1. All three leadership roles identified for teachers (instrumental, expressive, and dual) were significantly related to favorable attitudes toward physical activity.

2. All three student leadership roles were significantly related to the student's evaluation of his skill success.

3. The specific teacher leadership role of being "expressive" related significantly to attitude favorableness, student-rated skill success, and teacher-rated skill success.

4. The student dual leadership role was significantly related to teacher-rated skill success, and the teacher dual leadership role was significantly related to student-rated skill success.

5. The student "instrumental" leadership role was significantly related and had a strong, positive association with student-rated skill success.

In items four and five above, additional implications may be suggested. Students who identified teachers as being both "expressive" and "instrumental" were more likely to perceive themselves as being successful in skill accomplishments. An interesting contrast was found in that students who identified the combined "expressive-instrumental" characteristics among the fellow students were more likely to be rated "high" in skill success by the teacher. The importance of finding a significant relationship and a strong association between the student "instrumental" variable and the student-rated skill success variable should be particularly noted since this is the only instance under this heading where this occurred.

Relationships were found between each of the leadership roles (except for teacher "instrumental") and student-rated skill success; the implication may be drawn that students who are influenced by leaders also have regard for their capabilities in achieving a desirable level of skill. If one of the goals for a physical education class were to be high self-esteem by the students toward skill accomplishment, then it may be highly beneficial for the class to be structured to encourage the production and recognition of leaders. Since relationships between the teacher "expressive" variable and the attitude favorableness as well as skill development variable were verified, it may be suggested that attention by the teacher could be profitably directed particularly toward achieving affective goals in the application of teaching methods. In classes where the student "instrumental" leaders were identified, they appeared to have fulfilled the cognitive and skill development needs. Perhaps it may be generalized that teachers should strive to be more supportive of efforts and more affectively oriented if improved

attitudes and skill development are to be affected; and students should be encouraged to recognize and relate to highly skilled fellow students if higher self-perceived skill success is to be achieved.

Classes as the Unit of Analysis

1. Relationships between all student leadership roles and student-rated skill success were established. Statistically significant relationships were not found between any of the teacher leadership roles and the dependent variables.

2. The student "instrumental" variable correlated significantly with the attitude favorableness variable and the student in a dual role variable significantly related to the teacher-rated skill success variable.

3. Both teacher leadership variables did, however, yield strong but negative associations with teacher-rated skill success. And the student "expressive" variable showed a negative but strong association with teacher-rated skill success.

4. Each of the student leadership role variables were strongly associated with the attitude favorableness variable and also with skill success variable, the latter being the strongest association in this study.

It would appear that classes with student leaders may be more likely to rate high in their attitude toward physical activity and in their self-perceived skill level. It may also be imputed that teacher leadership roles have little effect upon positively influencing skill development as perceived by student self-ratings. Perhaps the teacher

leadership roles lend greater support to the classes with lower ranking students in skill level, as the teacher rated them, than the higher skilled classes.

At the broadest level of generality, three findings seem to persist:

1. Where students were identified in some leadership role, student-rated skill increased.

2. Where teachers were identified in some leadership role, student attitudes became more positive.

3. Where teachers were identified in some leadership role, teacher-rated skill success decreased.

Implications for Promoting the Socialization Process

Participation in physical activity by an individual under certain class structures within physical education activity classes presents a wealth of resources for studying socialization processes. Physical education classes may be structured so that not only does the opportunity exist for achieving goals of social development and physical skill development, but dynamic leadership role playing may be fostered and encouraged as a means for such ends. Through identification of socially motivating influences and imitation of admired, skillful performance, the individual may assume a followership role synonymous with the objective for the class.

This study has produced a basis for self-evaluation which the teacher may want to investigate for the purpose of promoting "instrumental" and "expressive" relationships between teacher and students. The "expressive" leader applauds or compliments the efforts of a class

member, offers encouragement, and affirms that the student is making contributions to the class endeavors. As we have already witnessed in the findings of this study, the teacher "expressive" relationship with the student may have played a most consistent and influential role in developing favorable attitudes toward physical activity and skill development. The skill and knowledge-oriented teacher also may promote a better feeling on the part of the student for the activity. The "expressive" and "instrumental" relationships between the teacher and student, both singly and in combination, indicated in this study that the classes which identified the teacher leaders were ranked lower by these same teachers as being successful in skill development. Perhaps this indicates that classes rating higher in skill success had little reason to relate with the "expressive" and "instrumental" teacher. In classes where teachers express a high regard for skill achievement, a reassessment of teacher leadership roles may need to be considered. The classes with high skill success rating may require teachers who exhibit a higher level of knowledge and skill and greater affective support. Instruction may need to be geared toward a higher skill level rather than teaching to a beginning or to the lower levels of skill most of the time. An effort may also need to be exerted toward giving recognition for achievement to the more competent, more skilled and the better self-directed students.

Recommendations

Since the purpose of this study was to ascertain whether "expressive" and "instrumental" leadership roles were related to attitude favorableness toward physical activity and skill development, perhaps

some of the generalizations could be explored under controlled conditions. The student self-evaluation of skill success correlated significantly and yielded stronger associations with leadership roles, especially with student leaders, than did teacher-rated skill success or attitude favorableness. An investigation to determine the significance of the influence of the student "expressive" and "instrumental" leader and student-rated skill status at the beginning and at the conclusion of physical education activity class and student-rated skill success may provide insight into the extent which reciprocal student-to-student teaching should be structured into methods of teaching. This study indicates that peer example and peer recognition may support the feeling one has that he has been successful in either maintaining or developing a higher than average level of skill. Certainly the possible effect of student interaction upon skill development and continued pursuance of an activity deserves further study.

The "expressive" teacher variable and the teacher-rated skill success variable may also be worthy of further exploratory study. The reason for the skill-oriented teacher relating positively to attitude favorableness, an affective trait, needs further examination. Since an inconsistency was established between the type of classes which were rated above average by the teacher in skill success and the classes which identified their teachers as both skill and affective leaders, perhaps a thorough investigation into the possible causes would be very enlightening. Or is it indeed true that the teacher needs only to deal in the socially supportive, affective domain rather than set an example of high skill proficiency and emphasize the benefits of top level skill proficiency? Or will the social and motor skill objectives be met as

efficiently when the teacher exemplifies both an "expressive" and "instrumental" relationship? The answers to these kinds of questions may be found through further empirical study.

Although relationships were established between leadership roles and the attitude and skill success variables, the possibility remains that extraneous variables may have affected the favorable behavioral and attitudinal changes defined in this study. Other methods of identifying the "instrumental," the "expressive," and the dual role leaders in a group must be tested against the method used here. The attainment of a large number of motor skill competencies as determined by standardized skill tests for specific physical activities may provide a means for identifying "instrumental" teachers and students. It seems to be of paramount importance that, if the "expressive" and "instrumental" relationships do affect desirable changes in skill acquisition and attitude toward pursuing physical activity throughout a lifetime, continued study must be devoted to these social interaction processes in physical education.

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APPENDIX A

STUDENT PHYSICAL ACTIVITY ATTITUDE INVENTORY

(40 ITEMS)

STUDENT PHYSICAL ACTIVITY ATTITUDE INVENTORY

INTRODUCTION

The following is part of a research project designed to ascertain the opinions of college students about certain aspects of our society. The statements on the pages that follow are concerned with physical activity. We are asking you to express what you think or feel about each. The best answer is your personal opinion.

PART I

DIRECTIONS

1. Please circle your responses.
2. Please answer all items. Do not circle more than one response.
3. Please respond to the following items according to your own opinion, using the following code:

VSA: very strongly agree
SA: strongly agree
A: agree
D: disagree
SD: strongly disagree
VSD: very strongly disagree

If you absolutely cannot decide upon an opinion, omit that item. But try to answer all items.

VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	1. I like to engage in socially oriented physical activity.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	2. Physical activity tears down sociability by encouraging people to attempt to surpass each other in many of the activities.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	3. My dislikes for physical activity outweigh my likes.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	4. Vigorous physical activity works off harmful emotional tensions.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	5. Physical activities do more harm physically than they do good.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	6. Participation in physical activities makes little contribution to the development of poise.

Code: VSA: very strongly agree - SA: strongly agree - A: agree
VSD: very strongly disagree - SD: strongly disagree - D: disagree

VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	7.	Becoming involved in physical activity tends to upset a person emotionally.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	8.	Physical activity is uninteresting.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	9.	Associating with others in some physical activity is fun.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	10.	It is important for people to belong to at least one group that plays games together.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	11.	Of all physical activities, my first choice would be those whose purpose is to develop and maintain physical fitness.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	12.	Associations in physical activities give people a better understanding of each other.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	13.	A happy life does not need regular participation in physical activity.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	14.	Physical activities provide few opportunities for learning to control the emotions.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	15.	I am not very interested in those physical activities whose sole purpose is to depict human motion as something beautiful.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	16.	I have an antagonistic feeling toward physical activity.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	17.	Of all the kinds of physical activities, I do not particularly care for those requiring a lot of socializing.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	18.	Since competition is a fundamental characteristic of American society, highly competitive athletics and games should be encouraged for all.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	19.	The most enjoyable forms of physical activity are games and sports engaged in on the spur of the moment, rather than those requiring long periods of training.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	20.	Strength and physical stamina are the most important pre-requisites to a full life.

Code: VSA: very strongly agree - SA: strongly agree - A: agree
VSD: very strongly disagree - SD: strongly disagree - D: disagree

VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	21.	I fail to appreciate what people who actively engage in sports and games see in them.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	22.	Participating in sports does not allow me to make full use of my capabilities.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	23.	A sport is sometimes spoiled if allowed to become keenly competitive.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	24.	Participating in physical activity is important in helping a person gain and maintain all-round good health.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	25.	Developing physical skill brings mental relaxation.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	26.	The final mastering of a certain movement or physical skill brings a pleasurable feeling that one seldom experiences elsewhere.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	27.	Physical activity has little educational value.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	28.	Skill in active games or sports is not needed for leading the fullest kind of life.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	29.	Americans are less physically fit than they should be.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	30.	A good way to become more socially desirable is to participate in group physical activities.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	31.	The degree of beauty and grace of movement found in sports is sometimes less than claimed.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	32.	Colleges should sponsor many more physical activities of a social nature.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	33.	Calisthenics are among the less desirable forms of physical activity.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	34.	The time spent in getting ready for and engaging in a physical activity could be more profitably spent in other ways.

Code: VSA: very strongly agree - SA: strongly agree - A: agree
VSD: very strongly disagree - SD: strongly disagree - D: disagree

VSA	SA	A	D	SD	VSD	35.	There are better ways of getting to know people than through sports and games.
6	5	4	3	2	1		
VSA	SA	A	D	SD	VSD	36.	There is not enough value coming from physical activity to justify the time consumed.
6	5	4	3	2	1		
VSA	SA	A	D	SD	VSD	37.	I would enjoy engaging in those games and sports that require a defiance of danger.
1	2	3	4	5	6		
VSA	SA	A	D	SD	VSD	38.	There is little room for self-expression in group physical activity.
6	5	4	3	2	1		
VSA	SA	A	D	SD	VSD	39.	If given a choice, I sometimes would choose strenuous rather than light physical activity.
1	2	3	4	5	6		
VSA	SA	A	D	SD	VSD	40.	People get all the physical exercise they need in just taking care of their daily work.
6	5	4	3	2	1		

PART II

DIRECTIONS: Please fill in the blanks where indicated; circle your responses on numbers one and two.

Your Name_____Date_____

Physical Education class in which you are presently enrolled_____

Course Number_____Section_____

Physical Education Instructor_____

1. Sex (1) Male (2) Female

2. Classification (1) Freshman (2) Sophomore (3) Junior
(4) Senior (5) Graduate Student
(6) Other (specify)_____

APPENDIX B

STUDENT PHYSICAL ACTIVITY ATTITUDE INVENTORY

(15 ITEMS)

STUDENT PHYSICAL ACTIVITY ATTITUDE INVENTORY

This is the final part of the research project designed to ascertain your opinion concerning physical activity. The information gathered will be used exclusively for research purposes, and at no time will your responses be identified by name.

NAME_____ SPORT OR ACTIVITY_____

COURSE NUMBER_____ SECTION NUMBER_____

I. The purpose of this part of the study is to determine how much success you personally feel you have attained in learning and in being able to execute or perform the physical skills of this class. In making your overall estimate, consider all of the physical skills covered in class. Where more than one sport has been taught, such as Archery and Riflery, try to make one composite judgment including all of the skills in each of the activities. CIRCLE THE NUMBER which best describes your personal skill success level:

Low skill success	0	1	2	3	4	5	6	7	8	9
High skill success	9	8	7	6	5	4	3	2	1	0

II. The purpose of this part of the study is for you to identify individual(s), if there are any, who outstandingly fit the descriptions (A) and (B).

CIRCLE THE APPROPRIATE RESPONSE(S).

You may list the same individual in both categories (A) and (B). You may list as many under each category as you feel are outstanding.
List by first and last names where indicated.

A. Who impressed you as being highly skilled, knowledgeable, and particularly concerned with improving the skill level of others?

1. No one
2. The instructor for this class
3. Student assistant(s)--List below by first and last names.

4. Class member(s)--List below by first and last names.

B. Who particularly applauded or complimented your efforts, offered encouragement, and made you feel that you were a contributing member of the class?

1. No one
2. The instructor for this class

3. Student assistant(s)--List below by first and last names.

4. Class member(s)--List by first and last names below.

III. The purpose of this part of the study is to determine your present feelings concerning physical activity.

1. Please circle your responses.
2. Please answer all items. Do not circle more than one response.
3. Please respond to the following items according to your own opinion, using the following code:

VSA: very strongly agree
SA: strongly agree
A: agree
D: disagree
SD: strongly disagree
VSD: very strongly disagree

If you absolutely cannot decide upon an opinion, omit that item. But try to answer all items.

VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	1. My dislikes for physical activity outweigh my likes.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	2. Becoming involved in physical activity tends to upset a person emotionally.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	3. Physical activity is uninteresting.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	4. Associating with others in some physical activity is fun.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	5. It is important for people to belong to at least one group that plays games together.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	6. Associations in physical activities give people a better understanding of each other.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	7. I have an antagonistic feeling toward physical activity.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	8. I fail to appreciate what people who actively engage in sports and games see in them.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	9. Participating in sports does not allow me to make full use of my capabilities.

Code: VSA: very strongly agree - SA: strongly agree - A: agree
VSD: very strongly disagree - SD: strongly disagree - D: disagree

VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	10.	Participating in physical activity is important in helping a person gain and maintain all-round good health.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	11.	Developing physical skill brings mental relaxation.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	12.	The final mastering of a certain movement or physical skill brings a pleasurable feeling that one seldom experiences elsewhere.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	13.	Physical activity has little educational value.
VSA 1	SA 2	A 3	D 4	SD 5	VSD 6	14.	A good way to become more socially desirable is to participate in group physical activities.
VSA 6	SA 5	A 4	D 3	SD 2	VSD 1	15.	The time spent in getting ready for and engaging in a physical activity could be more profitably spent in other ways.

APPENDIX C

REQUEST FORMS FOR INFORMATION FROM TEACHERS

To: All Physical Education Faculty and Graduate Assistants teaching fall activity classes.

From: Jo Oliver

I am conducting a study this semester in which I will need your assistance in collecting some data. I will be studying the attitudes of college students toward physical activity and how this relates to skill success and the identification of expressive and instrumental leaders (instructor included) in physical education classes. It will involve about one hour total time for you and about 30 minutes for your students. This is what it will entail:

1. FIRST WEEK OF CLASSES: Administer the attitude questionnaire to your activity classes.

2. DURING THE SEMESTER: Keep an attendance record and a record of all who drop after September 24.

3. LAST WEEK OF CLASSES: You will need to provide the number of days absent and a skill success rating for each of your students on a form which will be provided to expedite recording. The skill success will be rated on a 0 through 9 scale based upon any appropriate criteria you feel will best describe skill success.

4. LAST WEEK OF CLASSES: Administer the final questionnaire to your activity classes.

It is so important that this information be collected in a regular class meeting and that it be as accurate as possible. You should not need to define anything or answer any questions for them. Just encourage them to use their own opinions and try to answer all of the questions.

Please return all questionnaires to me.

Your cooperation in this endeavor will be greatly apppreciated.

To: All Physical Education Instructors who have classes participating in the Physical Activity Attitude Study.

From: Jo Oliver

I sincerely appreciate the time you have taken in your classes to administer the attitude questionnaire. It will be necessary to do some follow-up in order to obtain the most accurate and complete information from your students. The questionnaires I will be returning to you will either need to be completed by the student indicated and/or be checked by you to verify the section and class.

VERY IMPORTANT: In studying groups, it is necessary to include everyone who is officially enrolled and who continues in the class until the end of the semester.

Please collect one completed questionnaire from each student including these special cases:

1. Students who failed to complete the questionnaire because of an apparent oversight.

2. Students who change sections or classes.

3. Students who add the class.

4. Students who are enrolled in more than one physical education class even when the questionnaire has been completed in another class.

Please return all questionnaires to me. Thank you so much for your cooperation.

To: All teachers participating in the Physical Activity Attitude Study

From: Jo Oliver

Please read these instructions to your classes when you administer the questionnaire.

1. This is the final questionnaire for the Physical Activity Attitude Study. The researcher is most desirous of attaining the most accurate, honest, and complete data possible. Your cooperation in this endeavor is greatly appreciated. This effort is being made for the purpose of improving college physical education activity classes.

2. In order to insure absolute secrecy, upon completion the questionnaires will be collected, placed in the provided envelop and sealed. They will be returned directly to the researcher for the study. All names given will be converted to a number and will not be identified further by name.

3. Students who are enrolled in more than one physical education class participating in this study are requested to fill out a questionnaire for each class.

4. Fill in first and last names as it appears on your grade cards. This is _____ (name the activity for them). The course number is _____. The section number is _____.

5. Part I is asking you to give a skill success rating based on your opinion of what you think constitutes success for you. It is not intended to be an estimate of your grade for this class, nor is it supposed to reflect any kind of a direct comparison with others. It is to be an overall estimate of the amount of success you feel you have had in learning and in being able to execute or perform the physical skills of the class. This is a composite rating of everything we have covered in the way of physical skills. Nine is a realistic rating.

6. Part II is requesting names of individuals, if there are any, who best fit the categories as described under A and B. Keep in mind that these individuals are to be outstanding in the category described. If you need to know the name of one or more individuals, I will supply them for your identification. (Indicate at this time whether 3 is a possible response for this class.) Circle (1) "No one," if that is the appropriate response. Or you may circle responses 2, (3 depending on whether or not you have student assistants), and/or 4. You will need to write in first and last names if you circle response 4 (and 3, possibly). You may circle 2, 3, and 4, if all of them fit. You may list as many names as you feel are outstanding and appropriate. You may list the same individual or individuals under both Categories A and B.

7. Part III requests that you respond with your opinion.

8. Try to respond to each of the questions. Incomplete information will be of little value to anyone.

9. When you have completed both pages, your questionnaire will be collected, placed in the envelop and sealed. The envelop will be returned directly to the person conducting this research study.

You may administer the two-page questionnaire any time after December 6, 1971. Try to select a day when everyone is likely to be present. Otherwise, a follow-up on the absentees would be appreciated. If it is given at the final class meeting, follow-up will not be possible and these subjects will be lost to the study. This, of course cannot be avoided. I will have additional copies of these instructions if this one is misplaced. There will be additional questionnaires on my desk.

Thank you again for your assistance with this study. Pertinent class results will be distributed to you later.

To: All Physical Education Instructors who have classes participating in the Physical Activity Attitude Study

From: Jo Oliver

Please rate each of your students on a 0 (the lowest) through 9 (the highest) scale to indicate a measure of skill success in the activity or activities included in the class you are just completing this semester. Use any criteria you feel are appropriate and most discriminating for evaluating each student. Use a separate form for each of your classes which are in this study.

Class_____Section Number_____Instructor_____

	Student Name	Rating		Student Name	Rating
1.			26.		
2.			27.		
3.			28.		
4.			29.		
5.			30.		
6.			31.		
7.			32.		
8.			33.		
9.			34.		
10.			35.		
11.			36.		
12.			37.		
13.			38.		
14.			39.		
15.			40.		
16.			41.		
17.			42.		
18.			43.		
19.			44.		
20.			45.		
21.			46.		
22.			47.		
23.			48.		
24.			49.		
25.			50.		

APPENDIX D

ENROLLMENT OF THE UNIVERSITY AND THE SURVEY SAMPLE

TABLE XX

ENROLLMENT OF THE UNIVERSITY AND THE SURVEY SAMPLE

Variables	Percent of Students in Initial Survey	Percent of Student Enrollment
Sex		
Men	30.2	63.8
Women	69.8	36.2
University Classification		
Freshmen	48.6	22.8
Sophomores	26.3	20.2
Juniors	13.2	20.8
Seniors	10.9	21.1
Graduates	.5	15.4
Others	.6	.6

APPENDIX E

MASTER DATA ANALYSIS CHART

TABLE XXI

MASTER DATA ANALYSIS CHART: PERCENTAGES, CHI SQUARE LEVEL OF SIGNIFICANCE, AND YULE'S Q

	Teacher Leadership Roles					
	Individual			Between Classes		
	Expressive	Instrumental	Both	Expressive	Instrumental	Both
Favorableness of Attitude						
	- +			- +		
+	40.5 51.5	38.5 49.2	41.6 51.7	31.6 54.8	35.0 53.3	34.8 55.6
-	59.5 48.5	61.5 50.8	58.4 48.3	68.4 45.2	65.0 46.7	65.2 44.4
N	487 813	218 1082	551 749	19 31	20 30	23 27
	X^2 = 15.01	X^2 = 8.23	X^2 = 13.01	X^2 = 2.57	X^2 = 1.52	X^2 = 2.15
	p < .001	p < .01	p < .001	p < .20	p < .30	p < .20
	Q = .22	Q = .21	Q = .20	Q = .45	Q = .36	Q = .40
	Significant	Significant	Significant			
Skill by Student						
	47.2 57.7	48.2 54.4	48.5 57.7	57.9 48.4	50.0 53.3	56.5 48.1
	52.8 42.3	51.8 45.1	51.5 42.3	42.1 51.6	50.0 46.7	43.5 51.9
	487 813	218 1012	551 749	19 31	20 30	23 27
	X^2 = 13.40	X^2 = 3.31	X^2 = 10.86	X^2 = .43	X^2 = .05	X^2 = .35
	p < .001	p < .10	p < .001	p < .70	p < .95	p < .70
	Q = .21	Q = .13	Q = .18	Q = -.19	Q = .07	Q = -.17
	Significant		Significant			
Skill by Teacher						
	57.1 64.3	61.0 61.7	58.8 63.7	63.2 48.4	65.0 46.7	69.6 40.7
	42.9 35.7	39.0 38.3	41.2 36.3	36.8 51.6	35.0 53.3	30.4 59.3
	487 813	218 1082	551 749	19 31	20 30	23 27
	X^2 = 6.76	X^2 = .04	X^2 = 3.20	X^2 = 1.03	X^2 = 1.62	X^2 = 4.15
	p < .01	p < .90	p < .10	p < .30	p < .30	p < .05
	Q = .15	Q = .02	Q = .10	Q = -.30	Q = -.36	Q = -.54
	Significant					Significant

TABLE XXI (Continued)

	Student Leadership Roles					
	Individual			Between Classes		
	Expressive	Instrumental	Both	Expressive	Instrumental	Both
Favorableness of Attitude						
	- +			- +		
+	45.8 48.9	48.4 46.1	47.3 47.6	33.3 57.7	30.8 62.5	39.3 54.5
-	54.2 51.1	51.6 53.9	52.7 52.4	66.7 42.3	69.2 37.5	60.7 45.5
N	627 673	736 564	1010 290	24 26	26 24	28 22
	X^2 = 1.26	X^2 = .66	X^2 = .006	X^2 = 2.98	X^2 = 5.06	X^2 = 1.15
	p < .30	p < .50	p < .90	p < .10	p < .05	p < .30
	Q = .06	Q = -.05	Q = .005	Q = .46	Q = .58	Q = .30
					Significant	
Skill by Student						
	47.2 59.9	47.3 62.2	50.9 63.8	37.5 65.4	34.6 70.8	39.3 68.2
	52.8 40.1	52.7 37.8	49.1 36.2	62.5 34.6	65.4 29.2	60.7 31.8
	627 673	736 564	1010 290	24 26	26 24	28 22
	X^2 = 20.97	X^2 = 28.71	X^2 = 15.09	X^2 = 3.89	X^2 = 6.56	X^2 = 4.12
	p < .001	p < .001	p < .001	p < .05	p < .05	p < .05
	Q = .25	Q = .30	Q = .26	Q = .52	Q = .64	Q = .54
	Significant	Significant	Significant	Significant	Significant	Significant
Skill by Teacher						
	59.6 63.4	61.3 62.1	60.1 66.9	62.5 46.2	53.8 54.2	57.1 50.0
	40.4 36.6	38.7 37.9	39.9 33.1	37.5 53.8	46.2 45.8	42.9 50.0
	627 673	736 564	1010 290	24 26	26 24	28 22
	X^2 = 1.97	X^2 = .08	X^2 = 4.40	X^2 = 1.34	X^2 = .0005	X^2 = .25
	p < .20	p < .80	p < .05	p < .30	p < .98	p < .70
	Q = .08	Q = .02	Q = .15	Q = -.32	Q = .007	Q = -.14
			Significant			

APPENDIX F

INITIAL AND FINAL ATTITUDE SCALES

TABLE XXII

SCORES SHOWING THE MEAN DIFFERENCES BETWEEN THE INITIAL AND FINAL SCALES ON ATTITUDE TOWARD PHYSICAL ACTIVITY FOR EACH CLASS

Physical Activity Class	Mean Differences	Physical Activity Class	Mean Differences
1	.32	26	.25
2	.26	27	.11
3	.18	28	.34
4	.18	29	.42
5	.22	30	.28
6	.58	31	.12
7	.41	32	.37
8	.32	33	.17
9	.37	34	.29
10	.28	35	.22
11	.16	36	.26
12	.25	37	.20
13	.14	38	.32
14	.48	39	.12
15	.28	40	.36
16	.22	41	.21
17	.26	42	.27
18	.37	43	.57
19	.25	44	.05
20	.11	45	.29
21	.34	46	.34
22	.42	47	.48
23	.28	48	.29
24	.12	49	.20
25	.37	50	.24

VITA

Mary Jo Oliver

Candidate for the Degree of

Doctor of Education

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