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The purpose of this study was to investigate possible differences in personal distance ratings among college students enrolled in general undergraduate physical education classes of bowling, conditioning, folk dance, and volleyball. These classes were selected from physical education sections at the University of North Carolina at Greensboro. Three administrations of the Cowell Personal Distance Ballot were scheduled at equal time intervals during part of a semester. To further study intervening variables, class behavior was observed in terms of teacher and student verbal interaction. In addition, a questionnaire was devised to investigate whether or not relationships formed outside the specific physical activity class related to personal distance responses. Other behavioral indices consisted of teacher course objectives, teacher personal distance ratings, and skill grades.

The primary analysis for this study was concerned with the amount of social integration indicated by two treatments of personal distance scores taken from the classes of bowling, conditioning, folk dance, and volleyball. Inherent in this analysis were certain factors that needed to be clarified. Group size differed, teachers differed, and these classes met at different times of the day, and therefore, were subject to a diurnal influence. Thus, the

primary analysis was concerned with possible differences which might be attributable to the variables of group size, teachers, and diurnal factor in addition to differences relating to the two treatments of personal distance tests. The statistical method used for this analysis was an analysis of variance for significance of difference in pre-and post-personal distance scores taken from the four physical activity classes.

Other pertinent analyses were: (1) an analysis of variance of discrepancy scores grouped according to outside relation to class and skill level; (2) an analysis of variance of pre-and post-personal distance tests in terms of freshman, sophomore, and junior classifications.

Significant differences in personal distance among the subjects in different activity classes were found. It was also suggested that group size and teachers made a difference. Further noted was the suggestion that A skilled subjects differed from B or C skilled subjects in terms of personal distance.

A STUDY OF PERSONAL DISTANCE RATINGS AMONG COLLEGE STUDENTS ENROLLED IN FOUR PHYSICAL ACTIVITY CLASSES: BOWLING, CONDITIONING, FOLK DANCE AND VOLLEYBALL

by

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DEDICATION

An art of science she composes
Beyond realm of research design.
Multivariate her purposes
For students ere they so incline.
Decipher the art of teaching!
Mark well the "clarion call!"
Commitment - the art of seeking
Presupposes behaviors all.
Scrutiny embellishes the star,
To teach, perceive who you are.

To Dr. Celeste Ulrich - *Praeceptrici optimae, cum pro tota vita, tum pro hoc libro, gratias ago.*

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CHAPTER I

INTRODUCTION

Many writers today have applied the words "discontinuity" and "fragmentation" to descriptions of society. The societal limitations such words suggest are not just American in nature, but rather may represent the condition of the world, whose perimeters appear to be shrinking into the form of a "Global Village." The theme of social unrest is reiterated in the works of Mead (36), Riesman (43), Foshay (17), and countless others who have attempted to bring reason to the socio-cultural meanings of men. Though social theorists have specifically emphasized unique problems, such as the social consequences of different cultures, the differences within selected societies, the structural fragmentation of education, their central pivot is one of relatedness. The unitary theme seems to be that continuity can be provided through social interaction. Unity can exist in a shrinking world, but it must be clarified so that all men, however different, can perceive its necessity. There are no obvious, simplified outlines for such a theme; however, hints at pattern have been provided by those who advance the idea that humanization of social institutions provides a framework from which understanding may be postulated.

To clarify such a pattern, the social institution of education merits study. Adverse criticisms of education have been levied.

> "The school as we know it has a heritage of inhumaneness. Instead of treating students as individual human beings, we group, track, segregate, stereotype. It is not surprising that the students, learning the hidden lesson in such practices, do the same thing to one another and to their elders." (17:67)

The alternative for such inhumane education is humanization.

As Foshay (17) indicated, such an alternative demands confrontation with the purpose for which education exists. Essentially, he advocated that there are "schizoid" consequences for the substance of education when it remains subject-centered in an era when it should be directed toward self-fulfillment. Purposeful change in education suggests that it be restructured in every conceivable pattern. To enumerate such patterns would be beyond the scope of this research; however, there are suggestions that physical education might participate in such change. These suggestions infer that (1) "The key concepts of the social studies should be those concerned with society: the ideas of law, power, social structure, government, justice, equity, compromise and accommodation, and the like should occupy central and permanent places in such a program," (2) "...the central function of the school is to make the guidance function of the school central--not peripheral--to its operation," (3)

the school should contribute to students' self-awarenesses, and in essence, provide feedback toward student self identity. (17:54,56)

Physical education, as a participant in education, has not been blind to these recommendations. As early as 1935, Cowell (69) was dealing with the concept of physical activity as an index to behavior and recommended that such an index might contribute to diagnostic as well as therapeutic or guidance data for students. Other theorists have conceived of physical activity as a microcosm of society. These two approaches to the design of the physical education curriculum would seem to hold many implications for the humanistic school. But to proceed only on the basis of theoretical conjecture suggests only a nebulous design. Research must provide factual evidence to lend credibility to theory.

Numerous researchers have already provided insight into the social dimensions of physical activity. Theirs is an emergent contribution which provides a foundation for the continuation of such research. Still there are miles to be hurdled. If the future of physical education is to be a part of a behavioral focus, controlled experimentation is needed. Behavior must be measured in the context of physical activity, and different physical activities must be surveyed for their possible requirements of different behaviors. Personal distance as a part of social relatedness might offer some insight into the behavioral objectives of physical education.

STATEMENT OF THE PROBLEM

The purpose of this study was to investigate possible differences in personal distance ratings among college students enrolled in four different physical activity classes: bowling, conditioning, folk dance, and volleyball. These classes were selected from general undergraduate physical education sections at the University of North Carolina at Greensboro. Inherent in such selections was a consideration of group size. Personal distance needed to be interpreted in terms of small groups as well as large groups. Thus, the classes were selected with reference to the availability of two teachers, each of whom taught a small individually oriented class as well as a larger group oriented class which were comparable in size. Three administrations of the Cowell Personal Distance Ballot were scheduled at equal time intervals during part of a semester. To further study intervening variables, class behavior was observed in terms of teacher and student verbal interaction. In addition a questionnaire was devised to investigate whether or not relationships formed outside the specific physical activity class related to personal distance responses. Other behavioral indices consisted of teacher course objectives, teacher personal distance ratings, and skill grades. This study was exploratory in nature employing a reliable and valid sociometric instrument as the primary measurement tool.

CHAPTER II

REVIEW OF LITERATURE

> The answer lies in man's capacity to create order which will give his children a disciplined as well as tolerant conscience, and a world within which to act affirmatively. (14:288)

The purpose of this study was to investigate differences in personal distance ratings among college students in four different activity areas: bowling, conditioning, dance, and volleyball. Reduction in personal distance ratings poses an index of social integration which was the point of focus for this study. For this purpose the review of literature considered the following topics: social aspects of physical activity, social integration, measurement of social integration, social distance, and studies indicating change in social status.

SOCIAL ASPECTS OF PHYSICAL ACTIVITY

"Sociology is concerned with a study of people, of groups of persons, and of human activities in terms of the groups and institutions in society. As a science, it is interested in developing a better social order." (9:551) According to Loy and Kenyon, sociology involves the study of the underlying social order which requires discernment of the regular-

ity of human social behavior. (32:37) Thus, the social aspects of physical activity involve human behavior as it is demonstrated in the context of physical activity. Since physical activity is essential to the subject of physical education, the role of physical education is important as a medium of educational experience. Unlike other disciplines, physical education is not well defined to the extent that one can pinpoint topics which relate to its varied areas of study. Theorists, however, indicate that its subject matter consists of human movement as it relates to play, fitness, and movement. (51:117) Thus, the purposes and functions of physical activity as it demonstrates significance to human movement behavior must be related to social relevance.

Since physical education is the study of human movement incorporating a variety of physical activities, it is necessary to draw certain limitations. Even now theorists are attempting to categorize activities according to such criteria as purpose, method, and structure. Although no ultimate classification exists, Kenyon has proposed a conceptual basis for physical activity. His categories suggest that the purposes of physical activity are play, health and fitness, pursuit of vertigo, aesthetic experience, catharsis, and ascetic experience. (84:98) A number of authorities have noted that physical activities possess social implications. Therefore, the existing points of view provide the threads of continuity for the social aspects of physical activity. The

literature offers abundant support for social significance in three areas of activity--play, games and sport.

It should be pointed out that much of the material reviewed does not distinguish the areas of play, games, and sport. In fact, sport has a rather nebulous connotation ranging from professional work to a title inclusive of all types of physical activity, even dance. The logical conclusion, perhaps, is that sport is all of these. Its special connotation may depend upon who makes the interpretation. Thus, the relevance of functions of physical activity merit attention. Classifications of such activities remain to be distinguished by theorists in the discipline of physical education.

Social Significance in Play

That play is a cultural element is well substantiated. (9,45,51,88,92) Many authors have dealt with the concept of play; although their views may vary, they generally point to the socializing function of play. Huizinga (25) indicated that play as a "contest for something" or a "representation of something" extends into any aspect of life. He suggested that culture results from play. On the other hand, play may be considered an entity apart from ordinary life. (88) It seems unreal, a kind of fantasy. Ulrich viewed play as a mode of behavior:

> Man has played in every society of which history has been recorded. His play has been a part of his unitary self and has been self-determined, integrated and arranged, frivolous, and discrete. He has played in structured and unstructured ways, according to certain cultural directives, in order to test himself or to represent something which was important to him. Man could no more deny play than he could deny movement. (51:117)

Omvedt (88) partially synthesized these points of view by focusing on the self and relating that self to social interaction. Her relevant question is "Can one separate play and interaction?" (88:3) She separated the aspects of "self revealed in play" and the "self that plays" and suggests that play allows children to experiment with selves. Playing aggressive roles in unreal settings affords an acceptable way of dealing with aggression. In the same manner, adult play provides ritual which may neutralize conflicts. Thus, Omvedt asserted that realization of self through play, whether real or unreal, presents an expressible self to the world which is "undeniably real." (88:8) Oberteuffer and Ulrich further commented on the interactional benefits of play:

> Play tends to structure an individual's ability to interact with his peers. Without participation in play, the child has little opportunity for failure, success, risk, or adventure--all of which structure the morale of the life experience. Play is also essential to adults; it permits them to participate in a world of their own choosing which can be constructed according to the nature, needs, and desires of the player. It offers an adult the opportunity to test himself in a situation where the odds are usually known but where the outcomes cannot be predicted with certainty. (41:192)

All of the above mentioned descriptions of play are well marked as to the usefulness of play. However, Matthias and Fromm further describe an attribute of play as spontaneity. Matthias (35) intimated that the job of physical education is to sustain the play element throughout life. Such an element is acquired in the spontaneous sense experience of the child. Fromm stated that "positive freedom consists in the spontaneous activity of the total, integrated personality." (18:284) Such spontaneity is accorded a ". . . quality of creative activity that can operate in one's emotional, intellectual, and sensuous experiences and in one's will as well." (18:285)

Cowell (67) further noted differences in the quality of social interaction among "fringers" as opposed to those who enter wholeheartedly into play. He later indicated the value of play in personality analysis and cautioned physical educators toward the function of overt behavior in play as an index to the personality of the child. (70)

Oberteuffer and Ulrich pointed out that personality integration is dependent upon relationships with people and "play has all the potentials which are called for to produce an integrated social being." (41:206) Although physical activity is not always play, the play potential that it offers is significantly related to integrated behavior. It is this behavior that requires constant awareness on the part of educators who guide the process of education in an effort to

qualify individuals to function in appropriate roles in society.

Social Significance in Games and Sport

Games differ from play in that they are very definite structured forms of activity. The play element may be involved, but does not exist as a planned outcome. The relevance of games to the social setting may be immediately apparent when games are interpreted as a microcosm of society.

> Part of the appeal of games rests upon the fact that they represent a society that is easily discernible to most people. Games require roles, tasks, and sanctions. Games have boundaries and they have a permissive attitude toward endeavor. These characteristics are discerned because they are in a situation which is structured and is small enough for comprehension. Societal structure and function is diverse and complex, but game structure and function is unitary and simple. As games relate to society, so they are a picture of society. Games are used frequently as an analogy for societal description. They are a microcosm of society. (51:118)

Roberts et al (91) conducted a cross cultural analysis of games in fifty societies. They concluded that games occur so widely in different cultures that they must meet general human needs. Ulrich surveyed the reasons for games and her list appears paramount in human needs:

1. Games meet the need to prove one's superiority through challenge.
2. Games provide hope for the favor of destiny.
3. Games provide the pleasure of role playing.
4. Games offer opportunity for both fear and the inspiration of fear.
5. Games offer opportunity for second chance endeavor.

6. Games provide opportunity for improvisation, invention, and selection of solution or adventure.
7. Games offer opportunity for participation.
8. Games provide opportunity for testing one's self against untested odds.
9. Games insist upon conformity to rules and laws.
10. Games provide opportunity for the "stirring of one's soul" in the flights of ecstasy accompanying a skill well executed; in the amity of a united team; and in the respect demanded for the opponent who gives his best.
11. Sports and games are one of the more significant indices of the character and personality of America. They portray the genius of its people and set the stage for cultural formulation. (51:108-109)

It is difficult to separate sports and games as both may involve play and both reflect and direct the culture. Sage (45) differentiated between games and sport by defining games as recreational activities and by characterizing sport with " . . . institutional organization, formal instruction for players and teams, and leagues with teams contesting for championships." He stated that sport is further distinguished by commercialization and systematization of players into the artificial rankings of amateur and professional. (45:vii) Thus, at one level, such as a neighborhood game of basketball, a sport may be considered a game, while on another level, such as intercollegiate basketball, that same game emerges in the more formal organization of sport.

Varied factors in American culture have provided for the rise of sport. Technological development, leaving its wake of leisure time, has encouraged sport. Favorable economy, in

which sport equipment supplies a major industry, has fostered game and sport. America's outdoor resources have been utilized for sport in a climate well suited for such endeavor. Humanistic concern has also played a contributing role by expanding playground and recreational facilities into cities and industries. (51:110) Cozens and Stumpf (10) pointed out other factors which have influenced participation in game and sport. The high energy level among Americans permits such participation. The changing role of schools and churches as sanctioning agents for game and sport as well as increased access to transportation and communication greatly facilitated participation in sport and recreation. During the two World Wars, sport and game received attention because of their utility in building fitness and morale. As the rising standard of living has decreased differences between rich and poor, people from all socioeconomic backgrounds have turned more and more to sport and recreational activities. Finally the fact that the family pattern and status of women have undergone great change throughout this century has influenced family as well as individual participation in sport. Unlike the traditional family unit, the modern family finds its members scattered in different sections of the country. Mothers frequently work to lessen economic strain. The recreation facilities of industries and other businesses provide social activities for such women. Their children are frequently placed in the

care of nurseries where much of their learning involves motor skills, play, and games. Parents and grandparents are also often involved in senior citizen projects where recreation serves a socializing function. As women have become more involved in social roles which vary from those of family, there has been an increased interest in sport among women. (45)

Most of the above mentioned influences are related to changes within the social system. Since the prosperous era following World War II, such change has been rapid in occurrence. Some authorities, such as Mead (82) and Stone (45), have indicated that cultural fragmentation and discontinuity are inherent results of such change. Social reality becomes difficult to discern. Many sport authorities agree that the function of sport in the midst of this change is to provide continuity. Frederickson indicated that "our society has shifted from an era where character was largely formed for work and at work, to an era where character is increasingly formed for leisure and during leisure." (32:88) Stone asserted that interest in sport is concomitant with the close proximity of living in industrial society. (45:403) The suggestion intimated by such statements focuses on sport as it demonstrates potential for leisure and for a common meeting place for people of diverse background. Thus, it is the view of several authorities that sport plays an important role as an integrating component of Western society.

Dumazedier conceived of sports as leisure time activity and summarized its functions as follows:

1. The function of relaxation which relieves the fatigue caused by the activities of daily life. Hence, it is a function of recuperation contributing to health, restoring what is consumed in daily obligations.

2. The function of recreation which relieves the boredom of daily life with its restricted movements, its range of thought and action limited to institutions, industry, and the family.

3. The function of free development, particularly in industrial society, which provides relief from specialization, both in movement and in knowledge; specialization is necessary for the running of society, but it demands compensation for the individual who is himself more than a mere function in society. Leisure must allow a free development of sensations, feelings, and knowledge of capacities, including physical capacities. (27:213-214)

Beisser commented about the function of sport as it provides continuity in the midst of change and lists the following attributes of sports:

1. They provide an arena for the expression of many physical actions stimulated by the culture but precluded by the rules of everyday life.

2. They provide an opportunity for the symbolic or actual repetitive enactment of problem situations for the individual with the possibility of achieving some mastery through such avenues as the teaching by coaches, the support of teammates and fans, and rules which allow for a change of roles, activity instead of passivity, and the possibility of victory.

3. They provide for the individual continuity of interest at various ages, in a culture filled with ambiguity of role function.

4. They provide a transitional institution between work and play for the individual in his personal development and for society. (45:243-44)

Horkheimer indicated that because of the changes in family status, the individual needs respect, achievement, and meaningful contact with others. He reasoned that the functions of small groups in sport and play operate to satisfy those needs. (27:173-184)

In conjunction with the need for achievement, sport has served as a vehicle of social mobility for members of various minority groups. Negroes, as well as other members of low socioeconomic classes, where sport provides the medium of recreational outlet, have achieved status because of their abilities in sports. Sport remains an open class and operates with the ideal of "complete equality for all sportsmen." (45:248)

Because of the legends, myths, and heroes it spawns, sport relates to the arts. The mastery of time and space lends an aspect of beauty to performance. Like other aspects of culture, sport serves as a vehicle for ethical values. Unlike other cultural media, however, sport maintains an open class and promotes appreciation and dignity of the body. It is " . . . a portrait of humanism." (45:390-94)

Spectatorship appears to be an area of uncertainty in its potential for integration. Stone indicates it functions to bring people together, particularly members of the upper

classes. However, it may be a tension-generating factor among members of the middle class and among those of the working class. (45:417) Potentially, the common interests, loyalties, and enthusiasms associated with the sport audience are the great integrating threads in any culture. (10:299)

Maheu contended that sport and physical training are " . . . human disciplines with a social function and role in the formation and full development of personality." (45:386) Several authorities support this view. Bannister (12), Beets (45), and Weiss (52) proclaimed sport an ideal training ground for the young. Self-mastery is the objective which requires disciplined subjection of one's will to the rules.

Kane (27) studied the relationship between physique, physical abilities, and personality factors among four hundred twelve boys who were fourteen years of age. He concluded that a high level of physical activity favored extrovert development. Cortés and Gatti (65) also indicated that surveys of research relating morphology and personality factors show a definite trend for the mesomorph to possess such traits as ego dominance, extroversion, and aggressiveness. (65:82)

It is not clear that sport provides the development of strong personality traits, or the appeal to the arts, or even an appreciation for such principals as common interests

and loyalties among all individuals who participate in sport. What is suggested, rather, is the fact that sport possesses a variety of attributes whose special appeal may be different for different individuals who choose to participate. Inherent in those attributes, however, is structure which may help to clarify social role function for individuals. This structure would appear to be the emphasis for educational settings whose responsibility is to help clarify social roles in an effort to contribute to personality integration.

Thus, whether or not sport is valuable in terms of social integration appears to be a question relevant to how well it educates or promotes understanding. The fact that sport represents different meanings to people from different socio-economic backgrounds, particularly in terms of spectatorship, may suggest a stereotyped point of differentiation among classes of people. The trend of rapid social change, however, can only continue to provide problems of leisure time and to present secondary groups with primary group responsibilities. As the literature so well points out, sport, games, and play possess great potential to satisfy the needs of such problems. The sporting spirit contains the essence of democracy, a "formula for human relations," and thus, can serve as an integrating medium congruent with the principles upon which American culture was founded. (47:122)

SOCIAL INTEGRATION

Although much of the current literature approaches the concept of social integration with the idea of reducing racial issues, the significance of integration extends into every aspect of society. The theme of such a concept is human relations, a topic relating to any aspect of the social order which permits division among men. Lewin aptly scrutinized the dimensions of social integration in American society in the following statement:

> An attempt to improve inter-group relations has to face a wide variety of tasks. It deals with problems of attitude and stereotypes in regard to other groups and to one's own group, with problems of development of attitudes and conduct during childhood and adolescence, with problems of housing, and the change of the legal structure of the community; it deals with problems of status and caste, with problems of economic discrimination, with political leadership and with leadership in many aspects of community life. It deals with the small social body of a family, a club, or a friendship group, with the larger social body of a school or a school system, with neighborhoods and with social bodies of the size of a community, of the state, a nation and with the international problems. (30:203)

Concept of Social Integration

Very broadly social integration may be defined as "that social process which tends to harmonize and unify diverse and conflicting units, whether those units be elements of personality, individuals, groups, or larger social aggregations." (15:159) Bogardus, (58) who has studied ethnic integration within American society since the early thirties,

noted the limitation of this definition and emphasized the "process" involved in the concept. What is necessary in his idea is the gradual, unforced, fluctuating continuity involved in the process, which unfolds in rather nebulous stages. He indicated that a first stage necessitates a degree of accommodation, the suppressing of feeling in order to "play the game." Involved in a second stage is a measure of cooperation which may not cause changes in feelings, but allows one to go " . . . along with the externals of integration." Bogardus postulated that a third stage involves assimilation and some development of mental unity from the varied attitudes of group members. Within this stage, a group may adopt common beliefs and codes of behavior. Lastly, Bogardus emphasized that social integration does not require amalgamation, although exceptional cases may occur. (58:207-212) "Integration may now be defined as a process involving more than accommodation and compromise, a formal cooperation leading to informal cooperation, a working and thinking together toward mutually accepted goals, an increasing degree of assimilation but not amalgamation or miscegenation." (58:208) Bogardus further indicated the similarities in language, customs, traditions, and mores facilitate this process of integration. (58:210)

Blau (54) has proposed a tentative theory about social integration. His basic assumption is that each member of the group vies for strong social attraction with other members.

One becomes socially attractive by impressing the group with his good qualities. A competition for popularity ensues. Because of the various reactions to being impressed, the individual must interact with demonstration of approachability. He engages in a degree of self-deprecating in order to reduce threats to less impressive members. Outstanding qualities, especially when they contribute to group goals, necessitate associations of respect and deference. Thus, it is Blau's contention that social integration requires the very processes which lead to social differentiation. The services rendered by outstanding qualities intensify the need for integrative bonds to be formed within the group. Such interaction involves "exchange processes" which promote usable qualities from each member. (54:217-225)

Lewin suggested that insight into the dynamics of social integration must involve integrated knowledge from all branches of the social sciences. (30:204) His thought provided impetus for the study of small group behavior and such social theorists as Hare and Homans have contributed pertinent justification for small group research. Homans indicated that the small group is the basic unit of stability within our society and it operates as a "self-adjusting organism." (23:xii) Hare viewed the small group as a microcosm of society and considered the interplay of forces between individual and group the focus for relevant theory of human behavior. (21:v) Olmsted also supported the study of small

groups because they may " . . . enable us to see inner complexities and therefore uncover some of the submerged foundations on which the phenomena of social behavior rests." (42:144) Since inevitably the focus of social integration is human behavior, the question arises, what is socially integrative behavior?

Socially Integrative Behavior

Anderson indicated that socially integrative behavior is growth behavior. (54:251) He further stated that spontaneity and harmony are two essential criteria for responsible behavior, since he conceived of responsible behavior only as it is spontaneous and in harmony with that of others. (54:254) Maslow (34) indicated that spontaneity and creativity are characteristics of the self-actualizing person. (34) Kelley described the fully functioning person as one who thinks well of himself, thinks well of others, sees his stake in others, and sees himself as a part of the world in movement--in the process of becoming. He sees the value of mistakes, develops and holds human values, knows no other way to live except in keeping with his values, and thus, is cast in a creative role. (2:18-20) Rogers further characterized the fully functioning person as one who shows increasing openness to experience and trust in himself as a functioning being. (2:23-28) Rogers (44) suggested that part of the educational experience must be learning to become a trust-

worthy instrument for living in society. Such characteristics imply integration; such a person is " . . . unified within himself from the surface level to the level of depth." (2:29)

It can be concluded from the above descriptions that socially integrative behavior occurs within the personality of the individual as it relates that individual to others and to his world. Such behavior is ever in the process of becoming and as such relates to education, and more specifically, to physical education. In a sense, behavior is education's "most important product" and physical education sets the stage for persons to grow and to relate to others.

The subject of socially integrative behavior has been a topic of concern among physical educators as well as sociologists and psychologists. Even as Lewin was developing his concepts of group dynamics during the thirties, Cowell was formulating observations about behavior and pondering the problem of individual and group integration. He envisioned the physical education class as a behavioral laboratory in which play served both a diagnostic and therapeutic role. (69:147) Williams, (53) always cognizant of the "social implications" of physical education, indicated that team effort in which separate individuals integrate actions, illustrates the operation of individual personality. Oberteuffer and Ulrich (41) made extensive applications of the concept of integration to physical

education. Their central point is one of relatedness. Learning achieves continuity and structure as it relates to a larger whole. As learning has meaning " . . . to both the learner and the teacher, the integration of the totality that is man proceeds at its most rapid rate." (41:109)

Cowell (68) studied the contribution of physical education to social integration and pictured the integrated group as follows:

> An integrated social group is one in which there is a great deal of social interaction within the group and people are bound together by such organizational bonds as common goals and purposes. A good team and a good school as miniature societies illustrate integrated social groups. The quantity and quality of friendships developed by students in a physical education class or on an athletic squad should be a concern of a good teacher. They are also personal concerns of students. In a well-integrated social group each individual would tend to accept every other individual at close personal distance. (68:298)

MEASUREMENT OF SOCIAL INTEGRATION

Sociometry has been defined as " . . . a method of discovering and analyzing patterns of friendship within a group setting." (55:1070) Use of an appropriate sociometric scale reveals group structure and provides identification of subdivisions within the group as well as status positions, such as leaders or isolates. (37:11) Literally

thousands of sociometric scales are available for use. Generally educational research uses one of the following techniques:

1. A test which involves use of choices of specific criteria to serve a particular purpose at a particular time. For example, subjects may be asked to list five people within the group with whom they would prefer to work, play, or perform some other task.

2. A sociometric questionnaire or rating instrument which measures interpersonal attitudes and feelings, but not in respect to a specific functional-type criterion. Rather than asking respondents to list other members of the group, this type of questionnaire requests respondents to rate each other member according to categories specified by the particular instrument used. (5:61)

Ultimately both of these methods achieve similar results in assessing the social status of individuals within a group. The primary difference lies in the method of sociometric choice and in the method of scoring.

According to Barclay, (55) the rationale for using sociometric techniques is threefold. First, it offers a method of screening students whose learning difficulties may be more related to social difficulties than to lack of intelligence. Secondly, sociometric choices possess considerable "concurrent validity." That is, such choices correlate highly with other indices such as personality tests, ratings of mental health, apperception tests, Cattell's personality questionnaire, teacher ratings, and predictions of school dropouts. Thus, sociometric choices provide an

additional base from which the guidance counselor may work with individual students. Thirdly, it has potential as a means of evaluating behavioral change. Diagnostically, sociometry provides a means to determine individual preferences of people with whom to work. Theoretically then, sociometric tests provide a basis for structuring the environment of a classroom so that growth behavior may occur. Sociometric tests may be readministered in order to discern the fluctuations of individual status within the group. (55:1067-1075)

The Time Factor in Sociometry

There are inherent sources of error in considering any of the sociometric research relating to the variable of time. First, apparently no studies have been conducted for the purpose of discerning the effect of time. Second, those sources which have made generalizations about time refer to the elementary school level, where age and learning experience differ from that of the college level. Third, even on the elementary level, time is usually considered in terms of a sociometric choice test, a form which differs from the Cowell Personal Distance Ballot. As has been demonstrated in the review, time has generally been considered in terms of the activity unit. Thus sociometric tests were scheduled to coincide with the unit of activity.

Studies Employing the Sociometric Choice Test

A number of physical education studies employing sociometric measures have been conducted. In general, these studies have endeavored to seek the applicability of the sociometric technique to physical education classes, or to find relationships of social status and other aspects of physical activity. Many of the studies have used the sociometric choice technique. Although this particular technique is not the one used for this experiment, its application has helped to clarify the concept of social integration as well as to point out some of the variables involved. Therefore, some of the studies employing the sociometric choice technique were reviewed.

Yukie (98) compared methods of evaluating group integration over a period of one semester among thirty high school girls. She used three methods, observation and recording, sociometric choice test, and the Dimock's Best Friends Test. Each method was administered at the beginning, middle, and end of the term. Instrumental to such a study was the establishment of a democratic program, which allowed group goals to be established and worked toward. Yukie concluded that all three methods measured changes in group integration, but the sociometric test was the most productive and efficient method.

Hale (81) was interested in designing a set of criteria describing the ideal of the fully integrated group. It was

her rationale that such criteria would serve as a basis against which to compare group integration as measured by sociometric analysis in physical education classes. Thus, a teacher could discern the difference between integrated growth in his own class in comparison with a description of complete integration. After reviewing the literature, Hale proposed the following criteria:

1. The fewer isolates in the group, the better. Isolates are identified as being either not chosen or having no reciprocated choices.
2. The higher the total number of reciprocated choices within the limits of the number of choices allowed, the better.
3. As the group matures, the number of overchosen decreases, and the choices are shared by all.
4. The acceptance curve in which acceptance scores are plotted according to number of people who receive choices takes the shape of the normal curve, rather than its ordinary J shape.

Since the focus of Hale's criteria is on the reciprocity of relationships, her conclusions are in agreement with Blau (54), Criswell (75), and others who have commented about the subject of group integration.

Several experiments have been conducted to find relationships between sociometric status and indices of skill, strength, athletic ability, and fitness. Fulton investigated the relationship between teammate status and volleyball skill. Scores from teammate choices among college women were correlated with scores from teacher ratings of skill and scores on the French Volleyball Serve test.

Fulton concluded that a high correlation existed between all three indices; therefore she felt that the sociometric test was very useful as a diagnostic tool. (78)

Biddluph (56) examined the personal and social adjustment among high school boys who were rated high or low in athletic achievement. Four hundred sixty-one boys were tested by various indices of speed, coordination, and agility; they were then placed accordingly into rated groups of high or low achievement. Comparisons were then made according to their scores on the California Personality test, high school grades, the Hermon-Nelson Intelligence test, and teacher ratings of scholastic achievement, attitude toward school, and other traits. A sociometric choice test was also administered. The results indicated that the superior athletic group had a higher mean self-adjustment score on the personality test; higher mean score on teacher ratings and sociograms, as well as higher grade averages. It was concluded that athletic achievement was a factor of great importance in personal-social adjustment.

McGraw and Tolbert (86) investigated the relationship between athletic ability and sociometric status among junior high boys. A choice sociometric test was employed which requested respondents to list three boys liked best in their class, grade, and in the entire school. General athletic ability consisted of data from an athletic index, skill ratings, and interschool and intramural athletic experiences.

They concluded that a moderately high relationship between athletic ability and peer status was evident, although there was no relationship between mental maturity and peer status. Popularity appeared highly related to athletic ability and participation in interschool and intramural programs.

Jones (83) compiled material from case studies of twenty boys, ten of whom rated low in strength and ability to perform and ten who rated high in those areas. Although his material was not subjected to statistical analysis, he suggested that competitive athletics were one of the chief sources of esteem for boys in the period of their development preceeding maturity. Among the indices used in his seven year study were: grip strength, pulling strength, and thrusting strength measures; anthropometric measures, medical records, and performance on athletic tests. He also compared indices of behavior as suggested by cumulative records, reputation tests, popularity, leadership activities, staff ratings based on playground activities, and the Rogers Test of Personal Adjustment. He concluded that boys rating high in strength tended to possess good physique, better physical fitness, and to be earlier maturers. They also were rated higher in social prestige and level of personal adjustment. On the other hand, those low in strength tended toward an aesthetic physique and poor health. They also demonstrated tendencies toward social difficulties, lack of status, feelings of inferiority, as well as personal maladjustments in other areas.

Clarke and Clarke (63) investigated the relationship between criteria of personal-social adjustment and maturity, structural, and strength characteristics of boys nine to fourteen years of age. Extensive sociometric choice tests and mental health analysis were employed as indices of personal-social adjustment. Scores from these tests were correlated with data obtained from skeletal age, anthropometric measures and strength test batteries. The results indicated positive relationships between peer status, body size, and muscular strength. However, the comparison of mental health, strength, and body size was contrary to the peer status comparison. It was speculated that the physically superior boys were more aware of their own short comings and inadequacies which might consequently cause them to be more critical of themselves.

Haines wanted to know the relationship of two indices of fitness to social acceptance, teacher acceptance, and emotional stability among selected fifth grade students. The students were assigned the Rogers Physical Fitness Index rating and the Kraus-Weber Fitness tests as well as a sociometric choice test in both school and church settings. It was concluded that the sociometric and Physical Fitness Index scores did not significantly relate. However, there was significant relationship between teacher acceptance and social acceptance among students. (100)

These studies bring to focus Barclay's (55) concept of "concurrent validity" of the sociometric instrument. According to Barclay, significant relationships between peer status and such physical factors as physique, skill, strength, athletic ability, and teacher evaluations of students in different age groups lend support to such a tool.

Gustad and Yarnall investigated relationships of peer status and involvement in extracurricular activities. Gustad (80) in reviewing the literature on factors associated with social adjustment and maladjustment concluded that those participating in more social activities were more extroverted, stable, dominant, and showed fewer maladjusted tendencies on adjustment inventories than did non-participants. He also noted a low positive correlation between participation in extracurricular activities and above average academic achievement.

Yarnall investigated the relationship of physical fitness to peer status and involvement in extracurricular activities among seventy-five high school senior boys. His instruments for data-gathering were the Indiana Motor Fitness Index, the functional choice sociometric test, and a survey questionnaire. He found a positive relationship between physical fitness and popularity. Students high in popularity were more often involved in school clubs, organizations and intramural programs, but read fewer magazines than those

low in popularity. Thus, two studies verify a significant relationship between extracurricular activities and peer status. (97)

Fulton and Prange (79) wanted to know the effect of social status on ability to learn a new motor skill. They divided students into high and low groups according to teammate status. The subjects were then administered tests of speed, accuracy, and degree of manual pressure in making the "snoddy star," an electronic tracing device. No significant difference was reported between unchosen and highly chosen teammates in ability to improve their skills. However, a difference was noted in that highly chosen teammates applied manual pressure less times than did unchosen while drawing the "snoddy star." Thus, unchosen learners may "try harder" than highly chosen in learning a new skill.

SOCIAL DISTANCE

The concept of social distance was first analyzed by Park. (89) His empirical analysis brings to focus such factors as reserve, timidity, vague fears, and self-consciousness as inhibitors of spontaneity in human relationships. This inhibition can be conceived as distance in degrees of intimacy between two or more people. Park concluded that prejudice results from group consciousness, and reserve, from self-consciousness. Both prejudice and reserve arise in

society as conservative forces which preserve the social order as well as the social distances on which that order rests.

Sherif (46) stated that social distance is a negative feature of prejudice. It is measurable in terms of the distance at which members of one group hold another group and its members in relation to themselves. When such reserve is expressed in terms of a single individual, it is identified as "ego-distance." (46:339) Sherif further pointed out that prejudice is a "separating factor" in personal relations which acts contrary to the "native" human impulse to share with others. Furthermore, an individual acquires his prejudices as he gains his identifications, values, loyalties, and responsibilities. In other words, prejudice is a product of the process of socialization.

In support of Sherif's explanation, Allport (1) listed ten sociocultural conditions which foster prejudice as follows:

1. Heterogeneity in the population
2. Ease of vertical mobility
3. Rapid social change with attendant anomie
4. Ignorance and barriers to communication
5. The relative density of minority group population
6. The existence of realistic rivalries and conflict
7. Exploitation sustaining important interests in the community
8. Sanctions given to aggressive scapegoating
9. Legend and tradition that sustain hostility
10. Unfavorable attitudes toward both assimilation and cultural pluralism (1:306)

Allport further maintained that prejudice is ultimately a problem of personality formation and development and that no two cases of prejudice are precisely the same.

Fagan (77) indicated that degrees of social distance may range from a large amount in which there is little understanding or acceptance of a group or its individuals to a small amount which implies "fellow-feeling," acceptance, and sympathy. Furthermore, he stated that a large amount of social distance is assumed to be related to prejudice and stereotyping. He defined social distance as the degree of sympathetic understanding that exists between persons and groups. (77:281)

Poole distinguished between the concepts of personal distance and social distance. Social distance is " . . . the degree of intimacy which group norms allow between any two individuals." (90:116) He justified the need for norms on the basis of group welfare in a society which stratifies groups on such bases as age, sex, status, nationality, and race. Personal distance relates to relations sought for individual need gratification and are personal to the extent that they are free from social norms. Thus, relationships of acquaintance, friendship, mutual understanding, speaking terms, or Platonic love are bounded only by "the limits of intimacy" or the "possibilities of association." (90:116)

Measurement of Social Distance

Although a number of people have conducted studies of social distance using various techniques, it appears that the most used and valid test is that of Bogardus. (1,62, 77,85) The Bogardus technique asks respondents to indicate how near to marriage they would consider accepting people from different races, nationalities, and professions. It is essentially a peer status sociometric questionnaire. (64:288) According to Allport, results from the Bogardus scale distinguish between in-groups and reference groups. Since the pattern of preference is similar across the United States, showing little variance with income, region, education, occupation, or even with ethnic group, the conclusion is that minority groups fashion attitudes as does the dominant majority. (1:39) In other words, the dominant majority exerts pressure of attitude conformity upon minority groups. According to Allport the relevant question is "can humanity constitute an in-group?" (1:39)

There are those who believe that sport has an implied role in the establishment of in-groups. Stone asserted that the rise of sport is a concomitant of the reduction of social distances in American society. (45) Cozens and Stumpf stated that "common interests, common loyalties, common enthusiasms--those are the great integrating factors in any culture." (10:299) They further indicated that throughout America many groups with the various racial backgrounds and

cultural heritages are often conscious of their differences from one another and eager to find a common meeting ground. Leeman (27:152) suggested that sports have become an integrating component of Western society as they serve as socializing agents and intensifiers of the consciousness of "we." Young further asserted that " . . . the world of sport has become an undeniable force in moving the United States toward total integration." (10:248)

The Cowell Personal Distance Ballot

The Cowell Personal Distance Ballot was first published in 1938 as an adaptation of the Bogardus Social Distance Scale (66:16) It is a sociometric questionnaire which asks respondents to rate each member of the group according to acceptance in seven categories ranging from family to city. It is assumed that close acceptance among group members reflects the reciprocity of a well-integrated group.

Since the time of its development, the Cowell Personal Distance Ballot has attained status as a reliable and valid instrument. Reliability coefficients of .91, .88, and .93 were reported in Trapp's study (104), where repeated tests were administered to members of a college football team. Cowell later validated the instrument utilizing high school subjects (73). He reported validity coefficients of .84, when the ballot was compared with the criterion of scores from a "who's who" sociometric test, and .90 compared to a guidance counselor's rating of student adjustment.

Several studies have utilized the Cowell Personal Distance Ballot. Like those employing the sociometric choice test, a number of studies have been conducted to determine relationships between peer status and such indices as athletic ability, physique, strength, physical fitness, and maturity.

Clarke and Green (64) examined the interrelationships of various personal-social measures and maturity, physique, structure, and strength among ten year old boys. Among the measures employed were five indices of personal-social status: a sociometric choice test, the Cowell Personal Distance Ballot, the Cowell Social Behavior Trend Index, a level of aspiration measurement, and the Science Research Associates Junior Inventory. Other measurements taken were the Greulich-Pyle Maturity standard; body height, weight and bulk measurements; Sheldon's somatotype index; and muscular strength and endurance indices. The results indicated a high relationship between the sociometric and Cowell Personal Distance ratings of peer status. There were no significant differences between behavior trend measurements and peer status. Level of aspiration did not relate significantly to the other personal-social measurements. Also the SRA Junior Inventory maturity analysis was unrelated to other social measurements. Peer status measures correlated positively with mesomorphy and negatively with ectomorphy. Finally, positive relationships between the Cowell Personal Distance

scores and two motor ability items, the shuttle run and the standing broad jump, were reported. These items were unrelated to the sociometric test scores.

Menzi (101) compared the items of social adjustment and social acceptability among ninth and twelfth grade girls who rated high or low on the Iowa Motor Fitness test. Two hundred twenty-five ninth graders and sixty twelfth grade girls served as subjects. A choice sociometric test and the Cowell Personal Distance Ballot were administered, as well as the Cowell Behavior Trend Index. Menzi reported that the girls with high fitness ratings also rated higher in social adjustment and had closer acceptance ratings, by both boys and girls in their class, than the girls with low fitness ratings. No direct relationship between performance on each item of the Iowa Motor Fitness Test and social status was reported, however.

Cowell and Ismail (71) investigated the relationships between selected social and physical factors by compiling results of four independent studies. Pre-adolescent boys were subjects for three of the studies and the fourth utilized freshman football players. Social measurement instruments used were the Cowell Personal Distance Ballot, Cowell Social Adjustment Indices, and Partridge Leadership Ballot. Physical factors consisted of scores taken from the Purdue Motor Fitness test, the Cowell Athletic Aptitude Test, and a criterion scale for rating football ability. Interrelation-

ships were computed and the results indicated that subjects involved in team sports were more likely to be accepted at closer personal distance than those involved in individual motor fitness programs. It seemed apparent that closer personal distance resulted when group members worked toward a common goal. Further noted was the conclusion that boys scoring high on physical factors were likely to possess leadership qualities, to be accepted at close personal distance by their associates, and to be socially well adjusted.

Thus, the factors of mesomorphy, motor ability, physical fitness, and team play seem to correlate positively with close acceptance on the Cowell Personal Distance Ballot.

A different use of the Cowell Personal Distance Ballot has been made that appears more directed toward the social issues of the day. Green (99) investigated personal distance ratings applied to thirty nationally known athletes by high school and junior high school students. He administered the Cowell Personal Distance Ballot to seventy-five athletes from Riverside High School in Louisburg, North Carolina, and to one hundred five athletes from Harlem Park Junior High in Baltimore, Maryland. Instead of rating each other, they were asked to rate nationally known athletes in the areas of baseball, basketball, and football. The results indicated that baseball players received closer acceptance than those in the other two areas. Negro athletes were accepted more closely than white athletes. All athletes were generally

accepted within the third or fourth category of acceptance. That is, they were generally accepted as "a next-door neighbor" or as a "member of my gang or club."

STUDIES INVESTIGATING CHANGES IN SOCIAL STATUS

The following nine studies have investigated changes in social status or group structure in physical activity classes. Several have employed the sociometric choice technique.

Breck (61) employed the sociometric choice technique to find out whether or not the test was applicable to physical education classes. Five hundred eighty-six college women enrolled in swimming, dance, and volleyball were asked to list five classmates preferred on the basis of skill and then on the basis of friendship. These tests were readministered six to seven weeks later. It was concluded that a low positive correlation existed between choices of teammates and choices of friendship. Overall there was no significant changes in status. Breck concluded, however, that the sociometric test was useful as a diagnostic aid.

Other studies have been concerned with group integration as it relates to methodology. Richards (103) investigated changes in the amount of social integration in two college badminton classes. One class was encouraged to improve social relationships, while the other served as a control class in which no motivational techniques were used.

Both classes received the sociometric choice friendship test at the beginning and end of the badminton unit. Groups were equated according to motor ability test scores, stunts and tumbling skill ratings, and intelligence scores. Results indicated that considerable improvement in social relationships occurred in the encouraged class, whereas, minor changes occurred in the control class.

Whilden (96) investigated the sociometric status of seventh grade basketball students taught by two different methods. One class was pupil-dominated and the other, teacher-dominated. A sociometric choice test was administered at the beginning and end of the basketball unit. Groups were equated according to grade level, chronological age, mental age, basketball knowledge, and motor ability data. It was concluded that the pupil-dominated class was superior for improving the status of "near-isolated" students, whereas command of skill, knowledge of rules, team performance, and win-loss game records were more pronounced in the teacher-dominated class. Thus, the factors of motivation and group determination of class policies apparently play important roles in group integration.

Ondrus (102) examined the pattern of interpersonal relationships of members of a high school football squad in an attempt to find out how such relationships affected group cohesiveness. He administered a sociometric choice test to the group every two weeks during the ten week football sea-

son. Sociograms were made after each testing in order to record a group structure pattern. Although there were a number of shifts recorded in individual interaction patterns, there was no significant change in total group structure during the ten week period. Ondrus further noted that players who were "overchosen" exhibited an abundance of skills for playing the game of football.

Nelsen and Johnson (87) investigated changes in social status among college men as a result of participation in various forms of organized competition. Students were paired on the basis of sociometric choice ratings. Of the one hundred ten subjects, eighty-eight were randomly assigned to four badminton activity groups. Group one participated in paired doubles; group two competed in singles, each pair adding scores together in competition with other pairs. Group three competed in singles, each pair competing one against the other. Group four was the informal participating group in which individual competition took place without organization. The fifth group, the control group, was composed of randomly selected members who were participating in no activity classes. All subjects were given three weeks to learn names. After the first test was administered, subjects participated with anticohesive partners for three weeks. After the second administration subjects participated for three weeks with cohesive partners, and then received a final test.

Social distance in this study was analyzed as negative change in social status among members participating in cohesive pairs. Results indicated that social distance can be reduced when incompatible pairs play together in organized activity. It was also noted that changes in social status do not occur automatically from mere participation in sports activity or during social intercourse in an ordinary classroom setting.

Skubic (92) was interested in finding out how the Acquaintance Volume varied over a six weeks period in classes of dance, swimming, and volleyball. She administered the Acquaintance Volume test, which requests respondents to list the number of people known, during the sixth week of class and again six weeks later. She reported that the Acquaintance volume almost doubled during the six weeks with the greatest volume of acquaintance shown in the volleyball class.

Cowell and Ismail examined the relationship of successful football playing ability to social integration and academic ability. Forty-five college freshmen football players were used as subjects. Two ratings of the Cowell Personal Distance Ballot were taken, one at the end of the third week of practice and a second at the end of the football season. Academic ability was established on the basis of test scores in English and mathematics subjects. A revision of the Meyers football ability and attitude rating

scale was administered so that both coaches and players rated team abilities. A significant relationship between social acceptance and football ability was reported; however, no relationship existed between ratings of football ability and academic ability. It was concluded that social integration increased according to the length of time the players played together, and intense competition was reported to affect such integration. (74)

Walters (94) conducted a study of social integration in two bowling classes. One class was motivated by knowledge of results as well as individual and group competition. The second class, the control group, was given no motivational techniques. The Cowell Personal Distance Ballot was administered at the beginning of the fourth week and again at the end of the seven week period. Walters concluded that the better bowlers were more closely accepted members of the group. Both groups became more closely integrated socially as a result of acquaintance and group participation. However the motivated group was more closely knit than the non-motivated group.

Trapp (104) administered the Cowell Personal Distance Ballot to members of a college football team in effort to find evidence of social integration. Three ballots were given at three week intervals. His statistical analysis allowed him to analyze subgroups and to discover both positive and negative aspects of social integration within the

group. He concluded that the process of social integration was both positive and continuous throughout the season. The only evidence of increase in social distance was between the fraternity and independent groups. The other groups of seniors, juniors, sophomores, freshmen, linemen and backfield men all experienced reductions in social distance ratings.

These studies, since they have observed social status in repeated administrations of sociometric tests, bring to focus some of the variables involved in social integration. The most outstanding point made in such analysis is that team play or organized competition lead to more closely knit groups than classes in which those elements are absent. Motivation and pupil-dominated classes also contribute to better social integration. It is suggested that where no motivation exists, there will be little or no increase in social integration.

SUMMARY

The concepts of social integration and social distance appear to occupy opposite poles on a continuum of social interaction. Both concepts appear to be graded according to varying degrees of social interaction. At any given point on such a continuum, the degree of interaction can be expressed in terms of integration or distance. Essentially the two concepts counterpoise each other so that an inverse

relationship appears to exist. The more socially integrated a group becomes, the less is the amount of social distance among its members; conversely, when a group is characterized by little integration, there would be a great amount of social distance among members.

Social integration has been described as a fluctuating social process in which differences among different members of a social group eventually merge to pursue common goals. Qualities which have been proposed as characteristic of the integrated group are those of spontaneity and harmony. These qualities are not mentioned as characterizing the method in which social integration is achieved; rather, they suggest a quest for wholeness that is greater and more important than the differences inherent in the group. Furthermore, the suggestion is made that such qualities allow for the social processes of competition and conflict which may enhance the eventual quality of the integrated group.

Social distance has been described as a conservative force within the social order which emphasizes the differences among groups. This emphasis inhibits social interaction as it accentuates the aspects of social stratification that tend to separate groups. It is suggested that interaction among groups with a great amount of social distance would appear strained, reserved, and without spontaneity.

While social integration and social distance are concepts related to social groups, they may also be characteristics inherent in personality. It appears that integrated behavior as well as reserved or prejudiced behavior are products of attitudes formed during the process of socialization. Education deals with different groups of people in an effort to prepare them for appropriate roles in society. As a socializing agency, education is interested in promoting behavior that is not only differentiating, but also capable of growth into an integrated whole which represents achievement in creative use of individual capacities. Such achievement presupposes evaluations involved in self-identity as well as evaluations in terms of what is needed by society.

The method of sociometry has emerged as a possible index to aid such evaluation. Self-identity implies an educative role and may depend upon the social principle that part of an individual's identity involves an evaluation of how others regard his identity. Social status becomes a key to understanding the roles of individuals in groups and may reflect individual achievement as presented through other behavioral indices. It is suggested that sociometry can be used to measure social status and in the process may suggest ways of structuring the educational environment to improve or change social status.

Because rapid change in American society has operated to cloud social reality, the emergent responsibility of the

educational institution appears to be one of clarification. What kind of "reality therapy" can be provided by its varied disciplines, and what methods appear appropriate to accentuate some integrational factors among a diverse people? Play, games, and sport appear to possess potential contributions to this aspect of education. Thoughtfully supervised, such activity offers inherent indices to self-identity and allows for individual achievement from any class of people. Furthermore, these activities serve as an index to spontaneous behavior, and in that service, appear to be useful in making diagnostic as well as therapeutic analyses of social interaction.

CHAPTER III

PROCEDURE

The purpose of this study was to investigate differences in personal distance ratings among college students in four different physical activity classes: bowling, conditioning, folk dance, and volleyball.

SELECTION OF SUBJECTS

This study was conducted with the cooperation of the Health, Physical Education, and Recreation Department at the University of North Carolina at Greensboro. The subjects were one hundred and six freshmen, sophomore, and junior college students enrolled in classes of bowling, conditioning, folk dance, and volleyball during the fall semester of the academic year 1970-1971. At the beginning of the semester, the numbers of students enrolled in each class were as follows: bowling--15; conditioning--15; folk dance--40; volleyball--36.

SELECTION OF ACTIVITIES

Bowling, conditioning, folk dance, and volleyball classes were selected as activity areas for this study. These classes represented individual, dance, and team sport activities. It is generally assumed that team sports offer

greater potential for social integration than other types of activities. Thus, these selections were made in order to investigate possible differences in personal distance ratings among activities with varying emphasis upon individual, team and group endeavor. Additional support for these selections was the factor of teacher control. Bowling, an individual activity, and volleyball, a team activity, were taught by one teacher; while folk dance, a large group activity and conditioning, an individual activity, were taught by another teacher. Thus, both teachers taught two classes, one of which was a small individually oriented class, and the other, a large group activity, oriented toward group endeavor.

SELECTION OF MEASUREMENT TOOLS

Cowell Personal Distance Ballot

The Cowell Personal Distance Ballot was selected as the measuring instrument for this study. It was developed as an adaptation of the Bogardus Social Distance Scale, which has been rated by a number of authorities as the most valid and reliable measure of social distance. Furthermore, the Cowell Personal Distance Ballot was used by Trapp (104) as an index to the amount of social integration occurring among members of a college football team during a season of football. Cowell (73) later validated the instrument using high school students as subjects. He reported validity

coefficients of .84, when ratings were compared with the criterion of scores from a sociometric choice test, and .90, when ratings were compared with a guidance counselor's ratings of student adjustment.

As a sociometric questionnaire, the Cowell Personal Distance Ballot offers insight into the relationships of one individual to each other member of the group. (See Appendix A.) It is organized into categories of distance ranging from a minimum distance of 1 to a maximum distance of 7. For this study, the maximum distance categories were extended to include 8, a "don't know" category, and 9, a "prefer not to accept him" category. Since students rated each other very early in the semester, these extensions were added to allow more genuine initial responses.

The Cowell Personal Distance Ballot is further facilitated by a relatively simple method of scoring. An individual's acceptance index is obtained by adding all of the weighted scores and dividing that sum by the total number of ratings. Thus, if a particular student in a group of forty was rated 1 by all students, his index would be $40 \times 1 = 40 \div 40$ or 1.00. When the decimal point is dropped, 1.00 becomes 100 or the total weighted score for the given student. (4:384)

Teacher Rating Scale

The possibility that teacher attitudes toward students might influence personal distance ratings necessitated the construction of a teacher rating scale. (See Appendix B.) This rating scale was organized to indicate categories of acceptance comparable to those of the Cowell Personal Distance Ballot. To avoid the connotation of peer relationships, indicated by the "pal" or "gang" categories of the Cowell Personal Distance Ballot, the first four categories were reworded to indicate acceptance as follows:

1. as a member of my family,
2. as a close personal friend,
3. as a friend,
4. as a neighbor.

These categories appeared to allow consideration of personal teacher-student relationships. The last five categories remained essentially unchanged from those of the Cowell Personal Distance Ballot, including acceptance categories eight and nine.

Observation Chart

Personal Distance ratings may be related to the way in which classes are conducted, as well as to the interaction patterns within those classes. For purposes of describing interaction patterns and conduct of classes an observation chart was constructed. Verbal interaction patterns provided an easily identifiable frame of reference for such observation. Thus, the observation chart was structured to record verbal interaction. (See Appendix C.)

The chart was divided into five sections. Section I identified the given observation. It included the date, total time of observation, the particular class observed, and the number of students in class during the observation period.

Section two provided for the recording of teacher-initiated interaction. This section permitted consideration of interaction ratings in terms of the five minute time interval in which they occurred and the size of the group involved. Thus, teacher initiated interaction was rated, during a given time interval, and recorded as directed to the whole class, to smaller groups, (more than three students), or to individuals (one to three students).

Section three, labeled Other Description, provided for any additional observation which would add meaning to the interactions or further explain class organization.

Student initiated interaction was recorded in section four. As in section two, interaction ratings were placed according to time and size of group.

Finally, the codes for interaction ratings were shown in section five. Each interaction was rated according to intensity as well as method. Intensity referred to the involvement of the interacting individuals or groups. Intensity was rated on a scale of one to five in terms of the following description:

1. Intense--all members vitally involved, all speaking at once.
2. Less intense--some members speaking, others listening intently.
3. Moderate--less vitality, moderate involvement, the verbalization necessary for performing a task, unemotional.
4. Very little intensity--a verbal "afterthought."
5. None--not directed to any particular person; verbalization without intent of interaction.

Method referred to the way in which the interaction was initiated. The method of verbal initiation was described by the following code:

Q: Question
D: Direction--perform a specific task
P: Problem solving--think how to do a task
M: Mutual discussion
E: Exclamation--verbalization indicating elation or disappointment
Ex: Explanation--additional information regarding the "why" of performance

Thus, both teacher and student-initiated verbal interaction was rated in appropriate time intervals according to verbal intensity, method of initiation, and approximate size of the interacting groups.

Activity Questionnaire

The possibility that relationships other than those established in physical education classes influenced personal ratings necessitated the construction of a questionnaire. (See Appendix D.) An activity questionnaire was constructed for two purposes:

1. to determine areas of activities in which students participated, and
2. to determine whether or not members in each class shared such participation.

Actually the secondary purpose was the primary information sought; however, the additional request for specific activity areas was used to add validity to responses.

To consider these purposes, lists of activity areas had to be compiled. Various sources supplied such information as well as suggested categories for grouping activities. Invaluable aid to the formulation of activity lists was given by Mr. Jim Allen, Director of the Presbyterian House, Mrs. Jean Keller, Secretary in the Student Aid Office, Miss Candace Norton, President of the Recreation Association, and the Student Handbook. Inclusive lists were compiled with the help of these sources.

The questionnaire was then constructed to consider relationships formulated on the basis of the following activities:

Part I:	background information
Part II:	academic classes
Part III:	campus clubs and organizations
Part IV:	church related organization
Part V:	recreation activities
Part VI:	student employment
Part VII:	other areas of activity, not covered in previous parts.

These parts differed somewhat in their approach toward obtaining information. Part I did not refer to relationships, but provided a basis for population description in such terms as residence, marital status, and classification. Part II did not attempt to identify specific academic activities, but rather requested whether or not relationships

existed on the basis of mutual participation in those activities. Without exception, the remaining parts asked that activities be identified according to participation, and then relationships existing on that basis be indicated.

CONDUCT OF EXPERIMENT

It was the intent of this study to find possible differences in personal distance scores among college students enrolled in bowling, conditioning, dance, and volleyball classes. As in other sociometric studies, time of test administration was considered in terms of the activity units. Three administrations of the Cowell Personal Distance Ballot were scheduled at equal intervals between the beginning of the semester and the Christmas Holidays. This schedule provided that tests be administered in terms of continued class meetings without the interim time variable of Christmas Holidays.

Administration of the Cowell Personal Distance Ballot

The actual administration of the Cowell Personal Distance Ballot consisted of three phases: preparation, directions, and dates of test administration.

As a part of the preparational phase, teachers of each class explained that their students were needed as subjects for a thesis study; they then solicited the participation of their students. No opposition was evidenced; all

students demonstrated an apparent willingness to participate. The students were then informed that the first test administration would be given during their fourth class meeting. Since the fourth class meeting was early in the season and followed a series of orientation periods, it was assumed that students would not know each other by name. Therefore, numbered three by five cards were made, and each subject was assigned a number to correspond to his roll number. Thus, numbers provided identification of subjects rather than names.

The directional phase of the test administration is given in Appendix E. To provide uniformity of directions for all tests, this procedure was followed throughout the experiment. Sections A and B were not explained during the second and third administrations of the Cowell Personal Distance Ballot; however, procedures C through E were emphasized for all three administrations.

The third phase, or dates of test administration, is contained in Table I. Note that the final testing period was somewhat irregularly spaced in time. It occurred during the eleventh week of the experiment in order to avoid a potential excess of absences the week prior to the Christmas Holidays. It should also be reported that postcards were mailed to each subject early on Friday, December 4, 1970, to announce the date of the final test, which was scheduled for the following week. (See Appendix F.) Thus, subjects

were encouraged to attend the first and third test sessions, but they were given no indication of the second test date.

TABLE I

ADMINISTRATION SCHEDULE OF COWELL PERSONAL DISTANCE BALLOTS

Group	Dates	Number	Time	Place
Bowling	10/1/70	13	2:40 P.M.	Room 41 Coleman
	11/5/70	13	2:31 P.M.	
	12/10/70	13	2:20 P.M.	
Conditioning	9/30/70	13	11:20 A.M.	Room 15 Rosenthal
	11/4/70	8	11:30 A.M.	
	12/9/70	10	11:17 A.M.	
Folk Dance	10/1/70	33	2:15 P.M.	Room 108 Rosenthal
	11/5/70	35	2:15 P.M.	
	12/10/70	31	2:35 P.M.	
Volleyball	10/2/70	31	10:17 A.M.	Room 100 Coleman
	11/5/70	27*	10:22 A.M.	
	12/11/70	33	11:20 A.M.	

* Three men physical education majors had temporarily joined the class and were included in this test.

Administration of Observations

Since Ondrus (102) had observed fluctuations in interaction patterns during two week time intervals for his study, his time schedule served as a reference for scheduling observations in this study. Therefore, insofar as possible, observations were scheduled at two week intervals. (See Table II.)

A few variables about the structure of classes should be mentioned in order to better understand how the observations proceeded. Bowling and folk dance classes met on the same day at the same hour. Thus, observation time was divided so that bowling class was observed for half the period and folk dance for another half. Observations for these two classes alternated so that one class was observed the first half of one observation and the second half of the second observation. (Note time in Table II.)

The bowling class was organized in a manner that allowed half the class to bowl from two o'clock to two-thirty, while the remainder of the class bowled from two-thirty to three o'clock. Thus, different groups of subjects were observed during alternate observation periods.

Conditioning class was structured to allow students to use the first fifteen minutes of class for individually selected fitness programs. For instance, some students selected as a fitness goal to run the mile in eight minutes or less. Others pursued programs involving the bicycle

TABLE II

ADMINISTRATION SCHEDULE OF OBSERVATIONS

Group	Dates	Number	Time	Place
Bowling	10/15/70	8	2:00-2:29 P.M.	Room 41 Coleman
	10/29/70	7	2:34-3:00 P.M.	
	11/12/70	8	2:00-2:22 P.M.	
	12/3/70	10	2:33-2:58 P.M.	
Conditioning	10/14/70	7	11:15-11:57 A.M.	Room 15 Rosenthal
	10/28/70	9	11:10-11:57 A.M.	
	11/11/70	6	11:17-11:57 A.M.	
	12/2/70	9	11:10-12:00 A.M.	
Folk Dance	10/15/70	35	2:30-2:45 P.M.	Room 108 Rosenthal
	10/29/70	31	2:07-2:32 P.M.	
	11/12/70	32	2:24-2:53 P.M.	
	12/3/70	26	2:10-2:30 P.M.	
Volleyball	10/16/70	21	10:10-10:48 A.M.	Room 100 Coleman
	10/30/70	38*	10:05-10:50 A.M.	
	11/13/70	28*	10:10-10:50 A.M.	
	12/4/70	29	10:05-10:52 A.M.	

*Three men physical education majors had temporarily joined the class and were included in these counts.

ergometer, jump ropes, or weights. Within this structure, a system of rotation existed to allow students to experiment with different programs. Thus, subjects were in different areas during the first part of the class period, and observations made during that time did not include the total class. The last thirty minutes of class, however, was usually devoted to the teaching of new fitness programs or exercise sequences relating to the physiology of fitness. During this time, all of the class participated together and more complete class observation was made.

Folk dance class was organized so that new dances or new dance steps were taught or reviewed each class period. There was no systematic grouping of students as in other classes; rather, subjects participated in dances using different formations ranging from total class groups to small groups or partner groups. Groupings varied within the structure of a single dance as well as in different dances. Thus, observations were based on the verbal interaction of rather volatile groups which could have been a limitation in gathering an index of total class volume of interaction.

Volleyball class was structured for team play throughout the observation period. Teams consisted of five to six members each and participated in ten minute games played in a round robin style. During the total class period, one team played three games. Since there were three courts,

six teams were playing simultaneously. Except for teacher initiated verbalization directed to the whole class, observations were based on the interaction verbalized at one court during five minute intervals. Thus, five minute time intervals were usually indicative of the verbalization of two teams. Each five minutes, a different court was observed. Because teams played on different courts after ten minute intervals, there was some duplication of team interaction during these observations. The structure of the class, however, allowed observations to be focused on specific groups at any given time interval. Therefore, a reasonably complete estimate of verbal interaction was obtained.

In summary, the observation technique used for this study appeared to serve its purpose adequately in the three classes of bowling, conditioning, and volleyball. Observations of behavior in these activities was enhanced because of class structure. Folk dance, however, appeared to be an activity where group structure was ever changing. It contained elements of nonverbal interaction both among groups of students and between individual students and music. Thus, it may be of questionable value to scrutinize only verbal interaction because of the structure and nature of the class. No evaluation of the relation of nonverbal elements to personal distance ratings could be made.

Other Behavioral Indices

In addition to the material gathered through observations, a statement of course objectives was obtained from teachers. (See Appendix G.) Although there were no social objectives reported by Teacher B, the conduct of her classes appeared to be student-centered. As was evidenced in the classes of teacher A, some class time was devoted to student-teacher planning and evaluation. In all classes, students were given a voice in structuring class time.

Another index to student behavior was obtained through skill grades. Since the activities required different kinds of skill, skill grades were used as the criterion of skill analysis. Grades offered a more uniform method of indicating skill in the four different classes. Teachers were requested to grade subjects only on the variable of skill. (See Appendix H.) These grades were collected from the teachers on the same date as the last personal distance test administration.

A third index to student behavior was indicated through teachers' personal distance ratings of students. (See Appendix H.) Teachers rated their students during the second and third administrations of the Cowell Personal Distance Ballot.

Administration of Activity Questionnaire

The activity questionnaire was also administered on the same date as the final Cowell Personal Distance Ballot. Prior

to administration, two undergraduate women and two graduate women evaluated the questionnaire for clarity and understanding of procedure. These four women all agreed that the statements on the questionnaire were clear and that procedure was understood. No suggestions were made for revision.

A recapitulation of the events of the last test date is in order to produce a more integrated picture of the procedure for each class. For conditioning and volleyball classes, since these classes met on different dates, all three items, the Cowell Personal Distance Ballot, the Teachers' Rating Scale, and the Activity Questionnaire were administered by the writer. Numbers, pins, and pencils were distributed to subjects; directions for the Cowell Personal Distance Ballot were reviewed; and the subjects proceeded to rate other class members on the basis of acceptance which they felt was appropriate at that time. Teachers also rated subjects as the subjects were rating each other. As individuals finished their ratings, their ratings were collected. The Activity Questionnaire was then distributed to subjects.

Since bowling and folk dance classes met on the same date at the same hour, these classes varied somewhat in administration of test items. The teachers of these two classes were given lists of their students which contained

names and numbers. They were also given the Cowell Personal Distance Ballots. Bowling class subjects were informed that they should all report to class together, rather than come during their usual half hour schedules. At the beginning of the bowling class hour, Teacher A administered the Cowell Personal Distance Ballot. While the administration was proceeding in bowling class, the writer was administering the Activity Questionnaire in the folk dance class. Following that administration, Teacher B administered the Cowell Personal Distance Ballot, while the writer directed administration of the Activity Questionnaire in the bowling class. In this manner, the writer was able to assume control over the entertainment of questions regarding the questionnaire and could rely on teacher supervision for the Cowell Personal Distance Ballots, since the teachers had witnessed the two previous ballotings and were further reinforced with specific procedural instructions.

TREATMENT OF DATA

After all the data was collected, the Personal Distance scores were considered in terms of number of students who had been present at all three test sessions. The fact that some of the students had dropped classes since the beginning of the semester and some had been absent during the three ballotings, particularly the second one, reduced

somewhat the number of subjects to be considered in each class. Consequently, the scores for the second Cowell Personal Distance Ballot were eliminated, and classes were considered in terms of pre-test, post-test administrations of the ballot. The final count of subjects for each class was as follows: bowling--11; conditioning--10; folk dance--27; and volleyball--29. Raw scores for pre-test and post-test ballotings may be found in Appendix K. Table III.

The data were then set up for computer analysis. A Tsar program two by four analysis of variance was applied to the pre-test, post-test scores in order to determine differences on the basis of pre-and post-treatments, class size, teachers, and diurnal factor. This was the primary analysis for this study. A Scheffé test of significance of differences between means was then used to determine which groups exhibited the differences.

Since this study was exploratory in nature, it seemed appropriate to attempt to find whether differences were attributable to other variables. Hence, secondary analyses were submitted to the computer. The first of these was based on discrepancy scores (pre-personal distance scores minus post-personal distance scores); (See Appendix K, Table IV). A two by two factorial analysis of variance was applied to discrepancy scores on the basis of a "yes" or "no" outside relationship to the class and skill levels A or B and C.

Another analysis, a two by three analysis of variance, was applied to pre-and post-personal distance scores in terms of freshman, sophomore, and junior subjects to see if differences related to classification.

Two regression correlations were also computed. An analysis of the variables of teacher ratings and skill grades was made to determine whether a significant relationship existed between the two. Finally, a second correlation paired the variables of number of absences from class and discrepancy scores for a possible relationship between those two variables.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

This study was conducted in order to investigate possible differences in personal distance ratings among college students enrolled in four different physical activity classes: bowling, conditioning, folk dance, and volleyball. These classes were selected from general undergraduate physical education sections at the University of North Carolina at Greensboro. Inherent in such selection was a consideration of group size. Personal distance ratings needed to be interpreted in terms of small as well as large groups. Hence, these classes were selected with reference to the availability of two teachers, each of whom taught a small as well as a large class which were comparable in group size.

Three administrations of the Cowell Personal Distance Ballot were given to subjects. Only those subjects who had participated in all three tests were considered. Because several students dropped classes or were absent during certain tests, the second test was eliminated from this study. Personal distance ratings were then considered in terms of pre-test, post-test administrations. The number of subjects who participated in both of those administrations

were: bowling--11, conditioning--10, folk dance--27, and volleyball--29. Raw scores for pre-and post-test Cowell Personal Distance scores may be found in Appendix K, Table III.

To further study intervening variables, class behavior was observed in terms of teacher and student verbal interaction. In addition, a questionnaire was devised to investigate whether or not relationships formed outside the specific physical activity class related to personal distance responses. Other behavioral indices consisted of teacher course objectives, teacher personal distance ratings, and skill grades. All data from these sources may be found in Appendices G, H, and I.

Statistical data were organized on the basis of primary and secondary analyses. The primary analysis for this study was concerned with the amount of social integration indicated by two treatments of personal distance scores taken from the classes of bowling, conditioning, folk dance, and volleyball. Inherent in this analysis were certain factors that needed to be clarified. Group size differed; bowling and conditioning classes contained a small number of students in comparison to folk dance and volleyball classes. Teachers differed; teacher A taught bowling and volleyball classes, while teacher B taught conditioning and folk dance classes. These classes met at different times of the day, and therefore, were subject to a diurnal influence. Thus,

the primary analysis was concerned not only with the possible differences in pre-and post-treatments among classes, but also with the possible differences which might be attributable to the variables of teachers, group size, and diurnal factor. The statistical method used for this analysis was an analysis of variance for significance of difference in pre-and post-personal distance scores taken from the four physical activity classes. (Pre-and post-test means may be found in Appendix K, Table XVIII.)

Since the nature of this study was exploratory, secondary analyses were made to find possible influence among other variables. The secondary analyses were:

1. An analysis of variance for significance of difference in discrepancy scores (pre-personal distance scores minus post-personal distance scores) according to a "yes" or "no" outside relation to class, and an A or B and C skill level; (Means for this analysis are presented in Appendix K, Table XIX.)
2. An analysis of variance for significance of difference in pre-and post-personal distance scores according to freshman, sophomore, and junior classifications of subjects; (Means for this analysis may be found in Appendix K, Table XX.)
3. A regression correlation between the variables of teacher personal distance ratings and skill levels of subjects;
4. A regression correlation between the variables of number of absences from class and discrepancy scores.

PRIMARY ANALYSIS

Null hypotheses were formulated and a confidence level of significant difference was established at five per cent. Since this study was exploratory in nature, the five per cent level of confidence seemed an appropriate standard for the tenability of hypotheses.

1. There is no significant difference in the amount of social integration, as measured by the Cowell Personal Distance Ballot, evident in the four classes of bowling, conditioning, folk dance, and volleyball.

The F ratio obtained, as reported in Table V, was significant at the five per cent level of confidence. Therefore, the above hypothesis was found untenable. A Scheffé test of significance of difference between means was then employed to find which groups exhibited the differences. The Scheffé method allowed multiple mean comparisons to be made and was, therefore, appropriate for comparing groups according to both pre-and post-treatments simultaneously. (Further explanation of the Scheffé argument may be found in Appendix J.) Alternate null hypotheses were then formulated to consider possible differences among classes.

a. There is no significant difference in the amount of social integration, indicated by pre-and post-personal distance scores:

TABLE V

TWO-BY-FOUR FACTORIAL ANALYSIS OF VARIANCE FOR SIGNIFICANCE OF DIFFERENCE IN PRE-AND POST-TESTS ACCORDING TO CLASS

Source	Ss	df	MS	F*
Between treatments	78552.958	1	78552.958	33.695*
Between classes	285250.670	3	95083.563	40.786*
Interaction	48384.453	3	16128.151	6.918*
Within classes	340368.434	146	2331.291	
Total		153		

* All F ratios were significant at the five per cent level of confidence.

(1) between bowling and conditioning classes
(2) between bowling and folk dance classes
(3) between bowling and volleyball classes
(4) between conditioning and folk dance classes
(5) between conditioning and volleyball classes
(6) between folk dance and volleyball classes

Table VI presents the Scheffé comparisons for each of these hypotheses. The Scheffé argument indicated that no significant differences were evident for hypotheses 1 and 2. Therefore, these hypotheses were found tenable. Significant differences were revealed for hypotheses 3 through 6. Therefore these hypotheses were found untenable.

In summary, there was some decrease in the means of personal distance ratings from pre-test to post-test treatments of all classes. Such mean decrement suggests movement of groups toward increased social integration. The evidence presented by statistical scrutiny indicated, however, that differences between the treatments of bowling versus conditioning classes and bowling versus folk dance classes were not significant. Statistical differences were evident in other classes. Mean pre-test treatments and mean post-test treatments differed significantly in the following classes: bowling versus volleyball; conditioning versus folk dance; conditioning versus volleyball; and folk dance versus volleyball.

In general, the means of groups seemed to indicate that personal distance was reduced by one category of acceptance in terms of the Cowell Personal Distance Ballot from pre-to

TABLE VI

THE SCHEFFÉ TEST OF SIGNIFICANT DIFFERENCE BETWEEN MEAN PRE-AND POST-PERSONAL DISTANCE SCORES IN FOUR PHYSICAL ACTIVITY CLASSES

Group	N	Md(pp)**	Md	df	"s"*
Bowling vs.	11	397.818	37.318	20	2.502
Conditioning	10	360.500			
Bowling vs.	11	397.818	27.978	37	2.455
Folk Dance	27	425.796			
Bowling vs.	11	397.818	94.941	40	7.853*
Volleyball	29	492.759			
Conditioning vs.	10	360.500	65.296	36	5.1671*
Folk Dance	27	425.796			
Conditioning vs.	10	360.500	132.259	38	10.563*
Volleyball	29	492.759			
Folk Dance vs.	27	425.796	66.963	56	6.589*
Volleyball	29	492.759			

Only the "s"* were significantly different at the five per cent level of confidence.

Md(pp)** represents the mean difference in pre-and post-tests for each class.

post-test treatments. Means generally changed from acceptance as a "nextdoor neighbor" to acceptance as a "member of my gang or club." (See Appendix A.) However, the means of the folk dance class appeared to remain in the fourth category of acceptance, while the means of bowling and conditioning classes appeared to be more dynamic in change from the fourth to the third category of acceptance. Volleyball means, unlike the other groups, appeared to change slightly from the more distant fifth category of acceptance to the fourth category.

Other null hypotheses were formulated for the primary analysis in terms of the possible differences among classes which might relate to the factors of teacher differences, group size, and diurnal influence.

2. There is no significant difference in the amount of social integration, indicated by pre-and post-test personal distance scores between the small group classes of bowling and conditioning and the large group classes of folk dance and volleyball.

3. There is no significant difference in the amount of social integration, indicated by pre-and post-test personal distance scores between the classes of teacher A, bowling and volleyball; and those of teacher B, conditioning and folk dance.

4. There is no significant difference in the amount of social integration, indicated by pre-and post-test personal distance scores between the morning classes, conditioning and volleyball; and the afternoon classes, bowling and folk dance.

The Scheffé test revealed that there was significant difference in the amount of social integration between the small group and large group classes; see Table VII. Therefore, hypothesis 2 was found untenable. Table VIII contains the results of the Scheffé analysis for comparisons of classes taught by different teachers. Again, significant differences were found which suggested that hypothesis 3 was untenable. The results of the Scheffé test for comparison of morning and afternoon classes, however, indicated that no significant differences were evident. (See Table IX.) Therefore, hypothesis 4 was found tenable.

SECONDARY ANALYSES

Secondary analyses were performed on the personal distance data in order to investigate plausible explanations among other variables. For two of these analyses, the analysis of variance statistical method was used to discover possible differences. It seemed feasible that personal distance ratings might relate to relationships formed outside the physical activity classes as well as to skill level. Thus, variance was measured in terms of discrepancy scores

TABLE VII

THE SCHEFFÉ TEST OF SIGNIFICANT DIFFERENCE BETWEEN MEAN PRE-AND POST-PERSONAL DISTANCE SCORES OF SMALL GROUPS AND LARGE GROUPS

Group	N	Md(pp)**	Md	df	"s"*
Bowling +	11	397.818			
Conditioning vs.	10	360.500			
			160.237	76	11.059*
Folk Dance +	27	425.796			
Volleyball	29	492.759			

* There was significant difference at the five per cent level of confidence.

Md(pp)** represents mean differences in pre-and post-test treatments for each class.

TABLE VIII

THE SCHEFFÉ TEST OF SIGNIFICANT DIFFERENCE BETWEEN MEAN PRE-AND POST-PERSONAL DISTANCE SCORES OF CLASSES TAUGHT BY TEACHER A AND CLASSES TAUGHT BY TEACHER B

Group	N	Md(pp)**	Md	df	"s"*
Bowling +	11	397.818			
Volleyball vs.	29	492.759			
			104.281	76	5.973*
Conditioning +	10	360.500			
Folk Dance	27	425.796			

* There was significant difference at the five per cent level of confidence.

Md(pp)** represents mean differences in pre-and post-test treatments for each class.

TABLE IX

THE SCHEFFÉ TEST OF SIGNIFICANT DIFFERENCE BETWEEN MEAN PRE-AND POST-PERSONAL DISTANCE SCORES OF MORNING CLASSES AND AFTERNOON CLASSES

Group	N	Md(pp)**	Md	df	"s"*
Bowling +	11	397.818			
Folk Dance vs.	27	425.796			
			29.655	76	1.700*
Conditioning +	10	360.500			
Volleyball	29	492.759			

* There was no significant difference at the five per cent level of confidence.

Md(pp)** represents mean differences in pre-and post-test treatments for each class.

as they related to a "yes" or "no" outside relationship to class and to an A or B and C skill level. The second measure of variance was in terms of an analysis of pre-and post-personal distance scores among subjects grouped according to freshman, sophomore, and junior classifications. Two regression correlations were then computed to find possible relationships between the variables of teacher personal distance ratings of subjects and skill grades, and between discrepancy scores and number of absences from class. Null hypotheses were formulated and the five per cent level of confidence was accepted as a criterion for tenability.

5. There is no significant difference in the amount of social integration, indicated by discrepancy personal distance scores between groups rated A in skill level and groups rated B or C.

6. There is no significant difference in the amount of social integration indicated by discrepancy personal distance scores between groups who indicated a "yes" outside relationship to the class and groups who indicated a "no" outside relationship to the class.

The analysis of variance technique, presented in Table X, indicated that skill level groups differed significantly in terms of discrepancy scores. The greater means among groups rated A in skill suggests that those subjects exhibited greater change in personal distance ratings from pre-to post-test treatments than the groups rated B or C. Hence, hypothesis 4 was found untenable.

TABLE X

TWO-BY-TWO FACTORIAL ANALYSIS OF VARIANCE FOR SIGNIFICANCE OF DIFFERENCE IN DISCREPANCY SCORES ACCORDING TO OUTSIDE RELATION TO CLASS AND SKILL LEVEL

Source	Ss	df	MS	F*
Between skill levels	13124.675	1	13124.675	5.837*
Between yes and no ORC	6634.785	1	6634.785	2.951
Interaction	20.549	1	20.549	0.009
Within classes	164131.493	73	2248.377	
Total		77		

* There was significant difference in scores between A skill groups and B and C groups at the five per cent level of confidence.

No significant differences were indicated by the analysis of variance technique between groups who had indicated a "yes" outside relationship to the class and those who indicated no outside relationship. Therefore, hypothesis 5 was found tenable.

A null hypothesis for possible difference in pre-test, post-test treatments of personal distance ratings among subjects who were classified as freshman, sophomore, or junior, was formulated as follows:

7. There is no significant difference in the amount of social integration, indicated by pre-and post-personal distance scores between groups classified as freshman, sophomore, or junior. The F ratios obtained from the analysis of variance (Table XI) indicated that there was no significant differences among groups according to classification. Thus, hypothesis 6 was found tenable.

Null hypotheses for the possible relationships between teacher personal distance ratings and skill grades and between discrepancy scores and number of absences from class were formulated as follows:

8. There is no significant relationship between teacher personal distance ratings of subjects and teacher skill grades for subjects.

9. There is no significant relationship between number of absences from class and discrepancy personal distance scores.

TABLE XI

TWO-BY-THREE ANALYSIS OF VARIANCE FOR SIGNIFICANCE OF DIFFERENCE IN PRE- AND POST-TESTS ACCORDING TO CLASSIFICATION

Source	Ss	df	MS	F*
Between treatments	66809.962	1	66809.962	14.193*
Between groups	7147.335	2	3573.667	0.759
Interaction	2805.210	2	1402.605	0.298
Within classes	696652.250	148	4707.110	

* There was significant difference between treatments at the five per cent level of confidence.

Edward's table (13:426) indicated that a low, positive relationship was evident between the variables of teacher personal distance ratings and skill grades at the five per cent confidence level. The coefficient of correlation is presented in Table XII. Therefore, hypothesis 4 was found untenable. No significant relationship, however, was indicated for the correlation of number of absences from class and discrepancy personal distance scores. Therefore, hypothesis 5 was accepted as tenable. (See Table XIII.)

DISCUSSION

A number of points may now be presented concerning the statistical analyses. Regarding the primary analysis, the most outstanding finding suggests the class of volleyball as being significantly different from all other classes in terms of personal distance ratings from pre-to post-test treatments. The larger means obtained for this class indicated that the subjects maintained greater personal distance, and therefore, less social integration, than any of the other classes. This finding is not in agreement with that of Skubic (92), and does not support the general assumption advanced by Cowell and Ismail (71), Cowell and Ismail (74), Ondrus (102), Whilden (96), and Trapp (104) that team sports support better social integration than other types of physical activities.

TABLE XII

REGRESSION CORRELATION BETWEEN SKILL LEVEL AND TEACHERS' RATINGS

Variables	Mean	SD	r*
Teachers' ratings	3.844	0.947	
			.3392*
Skill level	1.857	0.790	

* A low positive relationship found at the five per cent level of confidence.

TABLE XIII

REGRESSION CORRELATION BETWEEN NUMBER OF ABSENCES FROM CLASS AND DISCREPANCY SCORE

Variables	Mean	SD	r*
Discrepancy score	44.169	50.480	
			-.010*
Absences	2.117	1.662	

* No significant relationship found at the five per cent level of confidence.

There are a number of differences which may relate to such discrepancy. Skubic was interested in finding differences in Acquaintance Volume in several activities ranging from individual types to volleyball, a team sport. The Acquaintance Volume Index is based on the number of names listed as its basis for measurement of social integration. Acquaintance Volume and personal distance may measure different aspects of social integration. No research was found which compared these two sociometric tools. The studies of Cowell and Ismail (71, 74), Ondrus (102), and Trapp (104) related to the concept of team sport as an interscholastic activity. From an educational class point of view, the concept of team may be different from the interscholastic concept in terms of its support of social integration. Such difference could influence the degree of social integration measured.

The manner in which personal distance ratings were obtained for the volleyball class in this study could also have been an influence. Team members rated each other member of the class, rather than only those who were members of their specific teams. Perhaps a more relevant investigation in terms of social integration would be a study of differences in personal distance among teams in a volleyball class.

Other possible influences were revealed. Whilden (96) indicated that teaching methods made a difference in the de-

gree of social integration measured in two team sport classes. While there were no outstanding differences in teaching methods observed for this study, the statistical evidence suggested that teachers and their teaching style may make a difference in terms of personal distance ratings.

Concerning the secondary analyses, the first of these suggested that A skill groups changed in terms of personal distance more than B or C groups. As was indicated in the primary analysis, post-test personal distance means were significantly lower than pre-test means. This evidence permits the assumption, then, that the direction of change in the A skill groups was toward closer acceptance. Walters (95) supported this finding by concluding that her more skilled subjects gained closer acceptance on the personal distance scale than did the less skilled subjects. A possible influence which may relate to both these results was the indication that there was a low positive relationship between teacher personal distance ratings and teacher skill grades.

OBSERVATION DATA

Class observations were scheduled at two week intervals, during the experimental phase of this study, to investigate verbal interaction among teachers and students as well as the general conduct of the four activity classes. An observation chart was devised to record verbal interaction in

terms of intensity, method of initiation of interaction, teacher and student initiation of interaction, and approximate size of the interacting groups. (See Appendix C.) Frequency distribution content for these observations may be found in Tables XIV through XVII. It should again be pointed out that interaction ratings were made in terms of five minute intervals for each class and that observation time varied in different classes (see Table II). Reasonable estimates of verbal interaction for conditioning and volleyball classes were enhanced because observations were made during the entire class periods. However, folk dance and bowling classes met on the same day at the same hour; therefore, observation time was divided between those classes so that they were observed only half the class period for any given observation. This time limitation could have influenced the data gathered from those two classes. In addition to this limitation, the bowling class observations were further limited by the fact that half the class bowled during thirty minute periods of class time. Thus, any given observation of the bowling class was limited to the verbal interaction of half the students involved in that class.

In terms of the actual interaction ratings, the frequency of verbal interaction was recorded on the observation chart for each observation. These ratings were placed in appropriate sections according to whether the interaction

was teacher or student-initiated. Other descriptions involved size of the interacting groups, and intensity and method of interaction. Within the limitations of the structure and nature of classes, a reasonable estimate of interaction volume was obtained for each class. The data were not subjected to statistical analysis; however, certain observations concerning the frequency of interaction in each class were made.

Bowling Class

The bowling class demonstrated an interaction frequency which ranged from a low of forty-three to a high of eighty-six. The low interaction frequency occurred in the first observation period, while the high frequency occurred during the second observation. The third observation reported an interaction volume of fifty-five and the final observation, seventy-one. Numbers of subjects observed were eight, seven, eight, and ten. It should be noted that subjects involved in the first and third observations differed from those in the second and fourth observations. Such difference in subjects could have influenced the number of interaction ratings recorded. Another variable that could have influenced the fourth interaction volume, was the absence of a teacher. In the breakdown of interaction ratings in Table XIV, it can be seen that teacher initiated interactions composed approximately one-half the total ratings

TABLE XIV

OBSERVED FREQUENCY DISTRIBUTION CONTENT
OF INTERACTION RATINGS
FOR BOWLING CLASS

OB. NO.	TOTAL	INTENSITY					METHOD						T.I.	S.I.	GROUP SIZE		
		1	2	3	4	5	D	M	Q	E	Ex	P			Wc	Sg	Ind
1.	43		20	13	9	1	18	13	9	3			21	22	3	1	39
2.	86	5	40	27	8	6	19	16	26	17	6	2	46	40			86
3.	55	1	15	18	11	10	15	7	19	8	6		28	27			55
4.	71		24	26	2	19	1	25	14	19	12		1	70		1	70
G.T.	255	6	99	84	30	36	53	61	68	47	24	2	96	159	3	2	250

Abbreviations: OB. NO.--Observation Number
T.I.--Teacher-Initiated
S.I.--Student-Initiated
Wc--Whole Class
Sg--Small Group
Ind--Individual
G.T.--Grand Total

for the first three observations. Conceivably, the teacher's absence would offer some explanation for the decrement of ratings during the final observation period, even though three additional students were present.

Table XIV further illustrates that the approximate size of the interacting groups was generally two to three in number. Much of the teacher-initiated interaction was directed toward specific individuals, while reciprocally, much of the student-initiated interaction was directed to the teacher or to a specific member of the bowling group. Bowling groups usually consisted of two to three students.

Method of initiation of interaction may be more meaningful if its frequencies are interpreted in terms of the first and third observations as compared to the second and fourth observations. The greatest number of frequencies for the first and third observations were initiated through the directional method. (For explicit meaning regarding methods, see Appendix C.) Next in rank were the methods of question, mutual discussion, exclamation, and explanation. For the second and fourth observations, methods ranked highest in mutual discussion and question followed by exclamation, direction, explanation, and problem solving.

The range of intensity of interaction appeared to vary in terms of the two groups of bowling subjects. Intensity frequencies for the first and third observations ranged as follows: 2--35; 3--31; 4--20; 5--11; and 1--1. For the

second and fourth observations, observed frequencies ranged: 2--64; 3--53; 5--25; 4--10; and 1--5. The second group appeared to be more verbal and to use verbalization without intent of interaction (intensity rating number five) more frequently than the first group.

In summary, the frequency distributions of interaction ratings for the bowling class would seem to indicate that approximately half the initiation was by teacher, and approximately half, by students. The greater quantity of interaction took place in groups of two to three people. Subjects involved in the second and fourth observations appeared to be more verbal than those involved in the first and third observations. Intensity varied in that the second group used verbalization without intent of interaction more frequently than the first group.

Conditioning Class

The conditioning class demonstrated a range of interaction ratings from a low frequency of nineteen to relatively consistent ratings of ninety, ninety and eighty-nine for the last three observation periods. (See Table XV.) The total number of students observed were seven, nine, six and nine for each of the four observations. Although the number of subjects varied somewhat during observations, the total volume of interaction appeared to be consistent during the last three observations. The first observation occurred early in

TABLE XV

OBSERVED FREQUENCY DISTRIBUTION CONTENT
OF INTERACTION RATINGS FOR
CONDITIONING CLASS

OB. NO.	TOTAL	INTENSITY					METHOD						T.I.	S.I.	GROUP SIZE		
		1	2	3	4	5	D	M	Q	E	Ex	P			Wc	Sg	Ind
1.	19		5	4	4	6	7		9		1	2	11	8	9	1	9
2.	90	6	47	31	6		31	25	21	1	11	1	39	51	23	2	65
3.	90	3	22	20	27	18	36	17	14	12	11		22	68	13	2	75
4.	89	9	29	32	3	16	26	27	12	8	16		44	45	46	19	24
G.T.	288	18	103	87	40	40	100	69	56	21	39	3	116	172	91	24	173

Abbreviations: OB. No.--Observation Number
T.I.--Teacher-Initiated
S.I.--Student-Initiated
Wc--Whole Class
Sg--Small Group
Ind--Individual
G.T.--Grand Total

the semester when subjects had had little experience together. This situation could have influenced the discrepancy in number of verbal interaction ratings between the first and last three observations. Another reason for this discrepancy could be the difference in number of teacher-initiated interactions compared with those initiated by students. The first observation was the only incidence in which teacher-initiated interaction exceeded that of students. This pattern possibly suggests that students were being exposed, at that time, to information about which they had little experience to verbalize.

For all observations, the weight of interaction appeared to occur in individual sized groups. There was, however, some indication that an increment of interaction was taking place in small groups, since there were higher frequencies reported there during the last two observations.

With the exception of the first observation, method of initiation for interaction was well dispersed among the methods of direction, mutual discussion, question, exclamation, and explanation. Although the problem solving method was little used, it was employed during the first two observations. This could have influenced later increments in mutual discussion and question methods. The fact that one hundred interactions of the total two hundred eighty-eight initiated as directions may oppose such postulation; however, the directional method (See Appendix C.)

was encouraged by the structure of the activity. Frequently, directions entailed cues to action during the timed shuttle runs or other aspects of the particular fitness programs used by students. Thus, the directional method was not limited to teacher-initiated activity.

In general, the intensity of interaction for the conditioning class appeared to be concentrated in the less intense and moderate range; however intensity descriptions ran the gamut of the scale. As can be seen in Appendix I, the classifications of subjects were diverse. What does not appear in that description, however, is the fact that two of the sophomores were older than the majority of the subjects and were continually interested in various aspects of the teaching-learning experience. These students could have influenced the intensity as well as methods observed in conditioning class.

In review, the number of interaction ratings taken from the conditioning class appeared to be relatively consistent after the first observation period. Frequency of student-initiated interaction was greater than that initiated by the teacher. The majority of the interaction took place in groups of two to three people; however, the final observations reported increments of interaction in small groups. Interaction frequencies appeared to concentrate in the direction and mutual discussion methods of initiation. Verbal

interaction appeared to be characterized by less intense to moderate intensity.

Folk Dance Class

Interaction ratings taken from folk dance class ranged from a low of sixteen to a high of fifty. These ratings occurred among groups of thirty-five, thirty-one, thirty-two, and twenty-six. (See Table XVI.) The low frequency of ratings was obtained during the first observation, while the high frequency was observed during the third observation. Both numbers of students and frequencies of ratings observed varied in different observation periods. Time of observation also varied (See Table II). Therefore, time as well as the numbers of students present could have influenced the number of interaction ratings obtained.

Considering all four observations, the frequency of teacher-initiated interaction was slightly higher than that initiated by students. In terms of group size, the number of verbal interactions directed to the whole class was greater than those directed to individuals. Small groups interacted less frequently than either the whole class or individuals.

Interaction ratings were dispersed among all choices of methods of initiation. The larger number of frequencies occurred in the method of mutual discussion, followed by direction. Question and explanation methods obtained the

TABLE XVI

OBSERVED FREQUENCY DISTRIBUTION CONTENT
OF INTERACTION RATINGS FOR
FOLK DANCE CLASS

OB. NO.	TOTAL	INTENSITY					METHOD						T.I.	S.I.	GROUP SIZE		
		1	2	3	4	5	D	M	Q	E	Ex	P			Wc	Sg	Ind
1.	16	3	12	1			5	7	3			1	6	10	4	5	7
2.	45	12	9	6	10	6	8	17	12		8		22	23	26		19
3.	50	3	18	17	10	4	15	16	4	3	10		25	25	19	20	11
4.	41	3	17	9	2	10	12	13	6		6		28	13	24		17
G.T.	152	21	56	33	22	20	40	56	26	3	26	1	81	71	73	25	54

Abbreviations: OB. NO.--Observation Number
T.I.--Teacher-Initiated
S.I.--Student-Initiated
Wc--Whole Class
Sg--Small Group
Ind--Individual
G.T.--Grand Total

same frequencies; while exclamation and problem solving methods were rarely used.

Observed intensity of interaction ran the gamut of the intensity scale. Larger frequencies were obtained for the less intense and moderate categories, while approximately equal frequencies were obtained for other intensity categories.

To summarize, the four observations for folk dance class indicated that a comparatively low range of verbal interaction was demonstrated. Teacher-initiated interaction was slightly higher than student-initiated interaction. Verbal interaction occurred more frequently in terms of the whole class than in smaller groups. Mutual discussion and direction methods were observed more often than other methods. The greater number of frequencies in the less intense to moderate intensity range indicated that slightly more than half the observed verbal interaction was characterized by moderate to more intense involvement.

Volleyball Class

Volleyball class demonstrated a range of observed interaction ratings from fifty-two to one hundred eighty-two. (See Table XVII.) These ratings were made in terms of twenty-one, thirty-eight, twenty-eight, and twenty-nine subjects. The low number of ratings was observed during the first observation, while the high number was obtained from

TABLE XVII

OBSERVED FREQUENCY DISTRIBUTION CONTENT
OF INTERACTION RATINGS FOR
VOLLEYBALL CLASS

OB. NO.	TOTAL	INTENSITY					METHOD						T.I.	S.I.	GROUP SIZE		
		1	2	3	4	5	D	M	Q	E	Ex	P			Wc	Sg	Ind
1.	52	4	22	17	7	2	16	9	2	25			15	37	9	37	6
2.	182	8	23	24	39	88	56	34	24	41	27		17	165	17	159	6
3.	143	5	25	36	34	43	45	42	12	29	15		18	125	8	121	14
4.	90	5	24	17	7	37	8	26	11	15	30		3	87	2	88	
G.T.	467	22	94	94	87	170	125	111	49	110	72		53	414	36	405	26

Abbreviations:
OB. NO.--Observation Number
T.I.--Teacher-Initiated
S.I.--Student-Initiated
Wc--Whole Class
Sg--Small Group
Ind--Individual
G.T.--Grand Total

the second observation. The volleyball class was observed for the entire class period during each observation. There were, however, certain aspects within those observations which could have influenced the data gathered. During the second and third observation periods, class size was increased by the presence of three men physical education majors who had temporarily joined the class. As can be noted in Table XVII, the volume of interaction for the fourth observation was less than that obtained during the two previous observations. Factors which could have influenced that count were the presence of a substitute teacher and the fact that the volleyball nets fell soon after tournament games began. Team members appeared to be perplexed about what to do. There was a lull in verbal interaction. The high frequency of interaction ratings obtained during the second observation could have been influenced by the large number of students present.

With regard to all four observations, teacher-initiated verbal interaction was always less than that initiated by students. In terms of group size, more interaction was observed in small groups than was observed for the whole class or among individuals.

Verbal interaction appeared to be initiated by the method of direction more frequently than other methods. The methods of mutual discussion and exclamation were more

frequently observed than were explanation or question methods. The problem solving method was not observed in the volleyball class.

The pattern of verbal interaction intensity appeared to be different from other classes. Verbal interaction without intent to interact was observed more frequently than interaction characterized by other categories of intensity. Less intense and moderate interaction ranges were observed slightly more often than interaction characterized by very little intensity. High intensity was observed less frequently than that described by other categories.

In summary, observed interaction for volleyball class seemed to indicate that a relatively high range of verbal interaction was demonstrated. Student-initiated interaction was observed much more frequently than that initiated by the teacher. Interaction appeared to occur more often in small groups than in terms of the whole class or among individuals. The direction method was used more frequently than other methods of verbal initiation. Observed intensity would suggest that much of the verbalization occurred without intent of interaction. In other words, many subjects appeared to verbalize to themselves rather than to others. Much of this verbalization was also an effort to spur the teams on so that the response suggested did not demand verbal reply, but rather non-verbal team action.

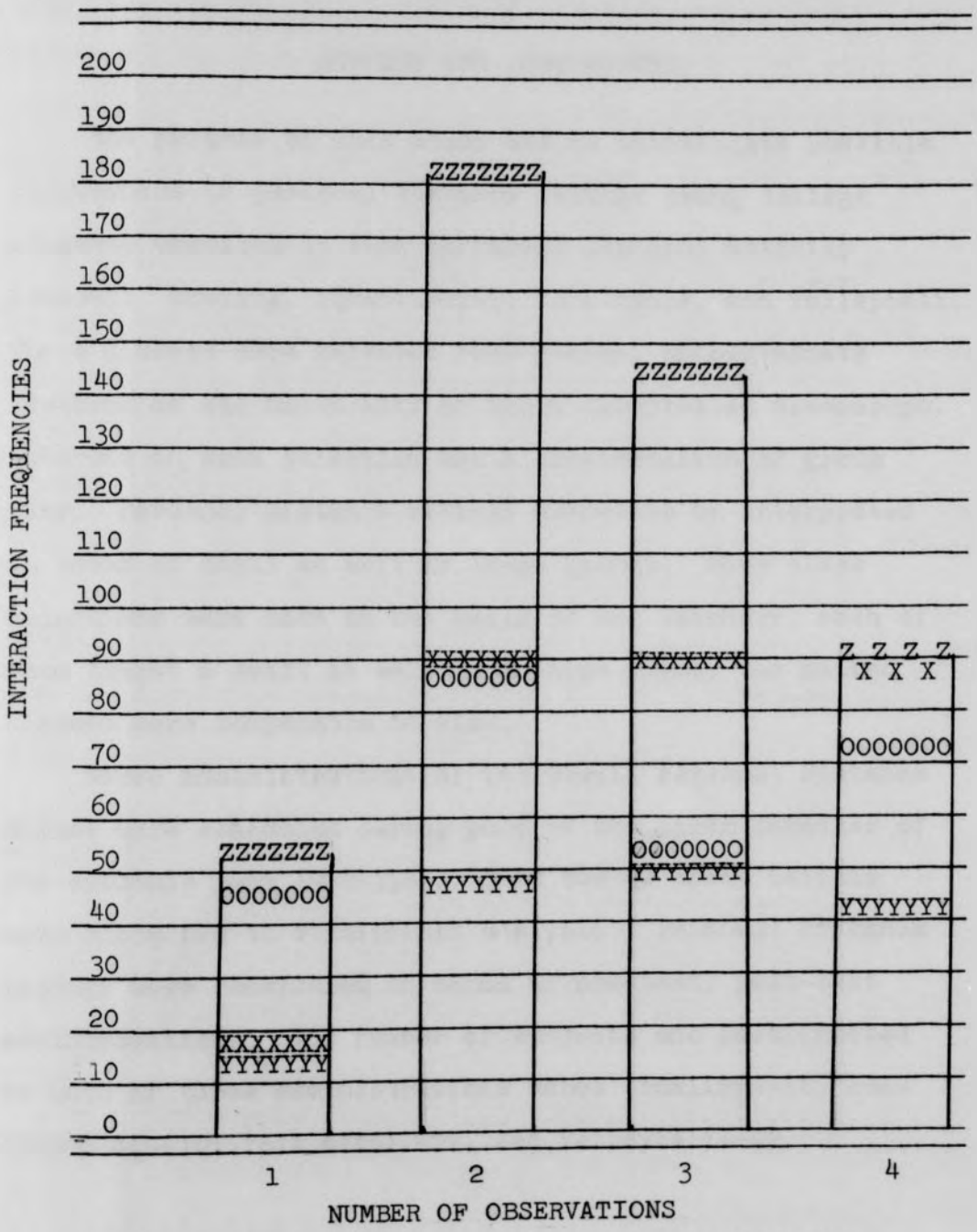
Figure 1 presents a comparison of the volume of verbal interaction among the four classes. For all classes, interaction was lower during the first observation period than for other observations. The highest frequency of verbal interaction was obtained during the second observation with the exception of folk dance class. The pattern of verbal variation was somewhat similar for all observations in that classes maintained the same relative positions in terms of interaction volume.

Since the observation data were not subjected to statistical analysis, no definite hypotheses could be tested for tenability. The description of class behavior provided by verbal interaction, however, seems to suggest that the different class structures affected various kinds of interaction in terms of teachers, students, methods, group sizes, and intensity of verbal involvement. The greater volume of interaction observed in the volleyball class would seem to support other research in physical activity classes which indicates that team sports contribute opportunities for social integration which may be lacking in other activities. It is not clear that verbal interaction and personal distance are related or that they affect similar aspects of social integration. They do indicate something about behavior, however, and as we learn more about how such behaviors relate to different physical activities, we may eventually identify explanations for different

behaviors. Such scrutiny must precede, it would seem, broad assumptions about the social implications of different physical activities.

FIGURE 1

OBSERVATION HISTOGRAPH



Symbols: O--Bowling Class, X--Conditioning Class, Y--Folk Dance Class, Z--Volleyball Class

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate possible differences in personal distance ratings among college students enrolled in four different physical activity classes: bowling, conditioning, folk dance, and volleyball. These classes were selected from general undergraduate sections at the University of North Carolina at Greensboro. Inherent in such selection was a consideration of group size. Personal distance ratings needed to be interpreted in terms of small as well as large groups. Thus class selections were made on the basis of two teachers, each of whom taught a small as well as a large class, the paired classes were comparable in size.

Three administrations of the Cowell Personal Distance Ballot were scheduled during part of the first semester of the academic year 1970-1971. Only two of these ballots were subjected to statistical analysis. Personal distance ratings were considered in terms of pre-test, post-test administrations. The number of subjects who participated in both of those administrations were: bowling--11, conditioning--10, folk dance--27, and volleyball--29.

Class observations were made to further investigate class behavior in terms of verbal interaction. A questionnaire was devised to investigate possible influences of relationships formed outside the specific physical education class. Other behavioral indices consisted of teacher course objectives, teacher personal distance ratings, and skill grades.

Statistical analyses were categorized in terms of primary and secondary analyses. The primary analysis was concerned with interpretation of pre-and post-personal distance ratings among the different physical activity classes. These data were also analyzed for possible influence among the variables of teachers, group size, and diurnal factor. The statistical technique used was an analysis of variance for significance of difference in pre-and post-test treatments among classes. Further statistical investigation was provided by the Scheffé test for significance of difference between means. Secondary analyses were:

1. an analysis of variance for significance of difference in discrepancy scores (pre-personal distance scores minus post-personal distance scores) according to a "yes" or "no" outside relation to class and an A or B and C skill level;

2. an analysis of variance for significance of difference in pre-and post-personal distance scores according to freshman, sophomore, and junior classifications of subjects;

3. a regression correlation between the variables of teacher personal distance ratings and skill levels of subjects;

4. a regression correlation between the variables of number of absences from class and discrepancy scores.

With the exception of the Scheffé tests, all statistical analyses were subjected to Tsar program computer analyses.

Null hypotheses were formulated for tenability at the five per cent level of confidence. Within the limitations of this study, the following results were obtained:

1. There is significant difference in the amount of social integration, as measured by the Cowell Personal Distance Ballot, among subjects enrolled in classes of bowling, conditioning, folk dance, and volleyball.

The Scheffé follow-up for this hypothesis suggested that:

A. There is no significant difference in personal distance between subjects enrolled in bowling, and conditioning classes.

B. There is no significant difference in personal distance between subjects enrolled in bowling and folk dance classes.

C. There is significant difference in personal distance between subjects enrolled in bowling and volleyball classes.

D. There is significant difference in personal distance between subjects enrolled in conditioning and folk dance classes.

E. There is significant difference in personal distance between subjects enrolled in conditioning and volleyball classes.

F. There is significant difference in personal distance between subjects enrolled in folk dance and volleyball classes.

The Scheffé test further indicated that:

2. There is significant difference in personal distance between subjects enrolled in small group and large group classes.

3. There is significant difference in personal distance between subjects taught by different teachers.

4. There is no significant difference in personal distance between subjects enrolled in morning classes and those enrolled in afternoon classes.

For secondary analyses, the analysis of variance technique indicated the following:

5. There is significant difference in personal distance between subjects rated A in skill and those rated B or C.

6. There is no significant difference in personal distance between subjects who indicated a "yes" outside relationship to class and those who indicated a "no" outside relationship.

7. There is no significant difference in personal distance among subjects classified as freshman, sophomore, or junior.

According to Tsar program regression techniques, other secondary analyses suggested that:

8. There is a significant relationship between teacher ratings of personal distance and teacher ratings of skill.

9. There is no significant difference between personal distance ratings and number of absences from class.

The results of this study have suggested that there are differences in personal distance ratings among subjects enrolled in different physical activity classes. Such differences appear to relate to the variables of group size and teachers. It was further indicated that A skill subjects appear to change more in terms of personal distance than those rated B or C. Relationships formed outside the physical activity class did not appear to affect personal distance ratings. No difference in personal distance was apparent among subjects whose classifications varied according to freshmen, sophomore and junior.

The exposure of differences in personal distance by this study can only represent a beginning point of investigation. The variables were too complex to expose single explanations for the differences. Descriptions of classes provided by observation were limited to verbal interaction. However, the data seemed to suggest that such variables as teacher-or student-initiation of interaction as well as methods, size of groups, and intensity involvement of such interaction may vary in different classes. Replication is needed before conclusive results can be obtained. Furthermore, as Allport (1) pointed out, personal distance may

be a phenomenon inherent in personality structure. Such postulation presupposes individual behavior. But as Cowell (69) indicated, promotion of individual behavior is the business of education, and such business involves teacher insight into personality structure. If education is to set the stage for self-fulfillment, then each discipline must become concerned with student social behavior. Upon that concern rests the imperative that physical educators seek further insight into behavior as it relates to different physical activities.

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APPENDIX A

Cowell Personal Distance Ballot

COWELL PERSONAL DISTANCE BALLOT

What to Do:

If you had full power to treat each student on this list as you feel, just how would you consider him? How near would you like to have him to your family? Check each student in one column as to your feeling toward him. Circle your own number.	Into my family as a brother 1	As a very close "pal" or "chum" 2	As a member of my "gang" or club 3	On my street as a "nextdoor neighbor" 4	Into my class at school 5	Into my school 6	Into my city 7	Don't know 8	Prefer not to accept him 9
1.									
2.									
3.									

APPENDIX B

Teacher Rating Scale

TEACHER RATING SCALE

The students in your class are listed below according to number. Across the page are categories of acceptance. How near to your family would you consider accepting your students? Please check each student in one column to indicate your acceptance of him.

List of Students:	As a member of my family	As a close personal friend	As a friend	As a neighbor	Acceptable to my class	Into my school	Into my city	Don't know	Prefer not to accept him
	1	2	3	4	5	6	7	8	9
1.									
2.									
3.									
4.									
5.									
6.									

APPENDIX C

Observation Chart

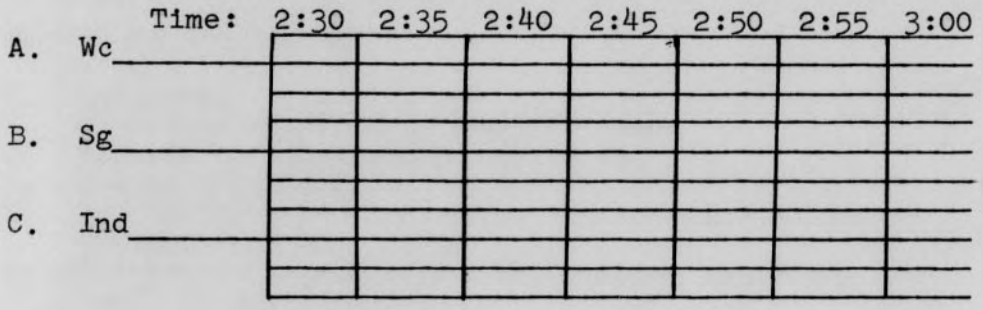
SAMPLE OBSERVATION CHART

I. Date _____ Time: In _____ Out_____

Class_____ Number in Group _____

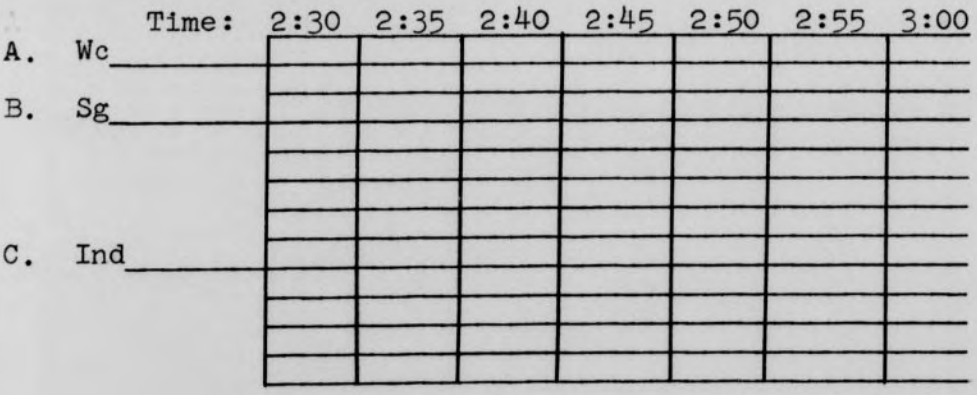
Type of day:

II. Teacher-Initiated Opportunity for Interaction



III. Other Description:

IV. Student-Initiated Opportunity for Interaction



Abbreviations:
Wc--Whole Class
Sg--Small Group
Ind--Individual

V. Interaction Rating:

1. Intense--All members vitally involved; all speaking at once.
2. Less intense--Some members vitally involved, others listening intently.
3. Moderate--Less vitality, some involvement, the verbalization necessary for performing a task, unemotional.
4. Very little--A verbal "afterthought"
5. None--Verbalization without intent to interact.

Method of Initiation:

Q. Question.
D. Direction--Perform a specific task.
P. Problem solving--Think how to do.
M. Mutual discussion.
E. Exclamation--Verbalization indicating elation or disappointment.
Ex. Explanation--Additional information regarding the "why" of performance.

APPENDIX D

Activity Questionnaire

ACTIVITY QUESTIONNAIRE

The purpose of this questionnaire is to identify people in this class with whom you share activities related to various aspects of campus life. The questionnaire is divided into seven parts. Part I consists of questions descriptive of yourself and your resident location. Parts II through VII relate to activity areas of a campus-wide nature, whether or not you are involved in such activities, and whether or not you and other members of this class share such experiences. Your careful consideration of each part will be much appreciated.

PART I. BACKGROUND INFORMATION: Please fill in the information requested in the blank provided.

1. Number_____ 2. Age____ 3. Sex (check one)
   Male_____ Female_____

4. Major field of study
   _____

5. Class___'71 (check one)
   ___'72
   ___'73
   ___'74
   ___Graduate student
   ___Unclassified
   ___Other

6. Marital Status (check one)
   _____ Single
   _____ Married
   _____ Separated
   _____ Divorced
   _____ Widow or widower

7. Check one of the following dorms, if you live on campus; if you live off campus, please indicate your street address and city below.

____Bailey	____Hawkins	____Phillips
____Coit	____Hinshaw	____Ragsdale
____Cone	____Jamison	____Reynolds
____Cotten	____Mary Faust	____Shaw
____Gray	____Mendenhall	____South Spencer
____Grogan	____Moore	____Strong
____Guilford	____North Spenser	___Weil
		___Winfield

____Live off campus - Street Address_____
City_____

8. Why are you in this physical education class?

____This activity unit was preferred over other physical education courses offered.
____No other physical education class was open to me during registration.
____To satisfy a physical education requirement, anything would do.
____This course was taken as an elective, for additional physical educational experiences.
____Other - please explain _____
_____

PART II. ACADEMIC CLASSES:

You are now enrolled in a schedule of an academic class such as English, Math, Foreign Language, Biology, etc. Are there members of this class with whom you share the same academic class?

_____ Yes _____No

On the answer sheet, each student in this class is listed according to number. If you answered "Yes" to the above question, please indicate the number of classes shared with each student in the blank provided under Part II. Place a number 0, 1, 2, etc. in each blank to indicate the number of classes shared.

DIRECTIONS: The scope of activities offered on the U.N.C.-G. campus is a vast one. The remaining parts of this questionnaire attempt to define (1) your involvement in those activities and (2) whether or not you encounter other members of this class as you participate in them. Thus, a list of activities will be given and you are asked to circle those in which you are involved. Students are listed according to number on the answer sheet. On the blank provided by each student under the appropriate activity, please indicate the number of activities that student shares with you.

SAMPLE:

Activity List	Student List	Part III	Part IV	Part V
(Basketball)	1.	0	0	0
Golf	2.	0	0	1
(Swimming)	3.	0	0	2
Tennis	4.	0	0	0
	5.	1	1	0

PART III. CAMPUS CLUBS AND ORGANIZATIONS

Collegiate Jaycees
Coraddi
Neo-Black Society
Sociology and Anthropology Club
Student Committee Organized for Research and Evaluation (SCORE)
Student Government Association
Student Nurses' Association
WEHL Radio Station
Dance Company
El Circulo Hispanico
Elliott Hall Council
Gamma Theta Upsilon
Golden Chain
The Carolinian
Outing Club
Alpha Kappa Delta (Sociology fraternity)
Alpha Psi Omega (dramatics society)
American Home Economics Association
American Institute of Interior Designers
Association Internationale Des Estudiantes En Sciences Economiques et Commerciales
Beta Beta Beta
Council on International Relations and United Nations Affairs (CIRUNA)
History Club
Le Cercle Francais
Masqueraders
Mensa
Mu Pi Epsilon (music sorority)
National Society of Interior Designers
National Student Association
Omicron Nu
Tutoring Children Better
University Chorale
University Concert Band
University Forensic Association
University Speech and Hearing Association
Phi Alpha Theta
Phi Beta Kappa
Pi Delta Phi
Pi Kappa Lambda
Political Economy Club
Psi Chi
Sigma Alpha
Sigma Delta Pi
Spleen Society
Student National Education Association

Other Clubs or organizations--Please list any others in which you are involved:

_____

_____

PART IV. CHURCH RELATED ORGANIZATIONS

Baptist Student Union
Christian Science
Hillel
Interfaith Council
Intervarsity Association
Lutheran Student Association
Meher Baba Study Group
Newman Club
Presbyterian House
Quaker Association
St. Mary's House
Wesley Foundation
Westminister Fellowship
Community Churches in the area of Greensboro

Other church related organizations--(please list):

_____

_____

_____

PART V. RECREATION ACTIVITIES

Bowling
Folk Dance
Golf
Intramurals (please specify) _____
Varsity Sports (please specify) _____
Folk Music
"Slimnastics"
Swimming
Tennis
Recreational Sports

Other recreational activities--(please list):

_____

_____

_____

PART VI. STUDENT EMPLOYMENT

The Student Aid Office offers a variety of jobs for students on campus. Job areas are listed below. Please circle the one in which you are involved. On the answer sheet, indicate the number of employment activities you share with other members of this class.

Computer Center
Demonstration Nursery
Dining Hall
Dorm Receptionist
Filing clerk
Elliott Hall
  Desk Receptionist
  Game Room Supervisor
Elliott Hall Food Service
  Banquets
  Dogwood Room
  Soda Shop
Home Economics Department
  Training School
  Cafeteria
Laboratory assistant
Library assistant
Life guard
Office assistant
Telephone switchboard operator

Other Employment areas
(please list)

_____

_____

PART VII. OTHER AREAS OF ACTIVITY

Are you involved with students in this class in activities other than those already specified in this questionnaire?

_____Yes _____No

If yes, in what activity?_____

On the answer sheet, under section VII, indicate the number of activities shared with other members of this class.

ANSWER SHEET FOR ACTIVITY QUESTIONNAIRE

Number of Absences _____

STUDENT NUMBERS:	PART II	PART III	PART IV	PART V	PART VI	PART VII	TOTAL
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							

APPENDIX E

Introduction to Thesis Study and Directions for the Cowell Personal Distance Ballot

DIRECTIONS FOR TEST BALLOTING

Appreciation was expressed.

A. I am a graduate student working toward a Master's Degree. As a part of that work I am conducting a study to find out how interaction varies in different activity areas. Thus, I will be giving this test to classes of Bowling, Dance, Conditioning and Volleyball. Since your ratings of other members of this class are subject to change during the semester, you will be given this ballot again later in the semester. I will also be observing your classes periodically.

B. From the beginning, let me point out that these ratings will in no way be used by your teacher to evaluate or grade you. They are collected only as material for this thesis.

C. Issue numbers and arrange the class in a circle so that all numbers can be seen by each member of the class.

D. Pass out Personal Distance Ballots and pencils.

E. Circle your own number.
Mark through numbers of those absent.
Describe format of Ballot.
Read instructions. <u>It is important that you be as truthful as possible in reporting your own feelings at this moment</u>.

APPENDIX F

Postcard Announcement of Final Personal Distance Ballot

POSTCARD ANNOUNCEMENT OF FINAL
PERSONAL DISTANCE BALLOT

Dear _____

Thanks for your participation, along with other members of your *_____class, in this thesis study. I would like to urge you to come to class **_____, since that will be the date of the final test. Your presence will help to add validity to the results.

Hope to see you there!

Sincerely yours,

Betty C. Harris

* The specific class in which the student was enrolled was placed here.

** The specific day and date was placed here.

APPENDIX G

Teacher Objectives

TEACHER OBJECTIVES

TEACHER A:

Bowling

1. To provide opportunities for student-teacher planning, assessment and evaluation.
2. For class members to know one another on a first name basis.
3. To teach bowling concepts (spot bowling, pin deflection, ball delivery) so that the student may become more self directing.

TEACHER B:

Conditioning

1. To offer the student a complete physical exercise program each class period.
2. To provide a portion of class time free of instruction so the student can experiment with various postural and body contouring exercises.
3. To guide the student so she can develop a physiologically sound exercise program designed to meet her own needs.
4. To provide instruction and practice time for students to master basic self-defensive techniques.

TEACHER B:

Folk Dance

1. To be able to dance with proper footwork and style a minimum of twenty-two folk dances from the United States and European countries.
2. To correctly answer questions concerning cultural patterns of certain countries and how they are reflected in folk dances.

TEACHER A:

Volleyball

1. To teach volleyball skills to meet recreational needs and enhance social interaction.
2. To guide each student in the learning of volleyball skills with emphasis on the serve and bump pass.

3. To cultivate team loyalty and team membership and team responsibility.
4. To provide opportunities for teacher-student planning, assessment, and evaluation.

APPENDIX H

Teacher Personal Distance Ratings and Grades

TEACHER PERSONAL DISTANCE RATINGS
AND GRADES

TEACHER A			TEACHER B		
Group	Tr.*	Gr.**	Group	Tr.	Gr.
Bowling	3	B	Conditioning	4	B
	3	B		3	B
	4	B		5	A
	3	B		4	B
	3	A		5	A
	4	C		5	C
	3	A		4	B
	4	C		5	C
	3	A		4	A
	4	C		2	A
	4	C			
Volleyball	3	A	Folk Dance	4	B
	3	B		5	A
	3	A		3	B
	3	B		6	B
	5	B		4	B
	5	C		3	A
	4	B		4	A
	5	C		6	C
	3	B		3	A
	5	C		3	B
	3	C		4	B
	3	C		5	A
	3	A		3	B
	3	B		3	A
	4	C		4	A
	4	C		5	B
	5	B		4	A
	3	A		3	A
	3	A		5	A
	3	B		1	A
	5	C		5	A
	3	A		5	A
	4	C		4	A
	4	B		4	B
	3	A		4	A
	5	C		5	B
	4	C		3	A
	5	C			
	3	B			

*Teacher personal distance rating
**Grade

APPENDIX I

Distribution of Number of Absences from Class, Outside Relation to Class, and Classification Variables Among Subjects

DISTRIBUTION OF NUMBER OF ABSENCES FROM CLASS, OUTSIDE RELATION TO CLASS, AND CLASSIFICATION VARIABLES AMONG SUBJECTS

Group	AB.	ORC.	Class.	Group	AB.	ORC.	Class.
Bowling	2	yes	Sophomore	Conditioning	4	yes	Freshman
	4	yes	Sophomore		2	yes	Junior
	3	yes	Sophomore		2	yes	Sophomore
	1	yes	Sophomore		7	no	Sophomore
	5	yes	Sophomore		1	yes	Sophomore
	1	yes	Sophomore		5	no	Junior
	3	yes	Sophomore		6	no	Freshman
	1	yes	Sophomore		3	yes	Junior
	0	no	Sophomore		2	yes	Sophomore
	4	yes	Junior		1	no	Sophomore
	3	yes	Sophomore				
Volleyball	4	yes	Junior	Folk Dance	3	yes	Freshman
	3	yes	Freshman		1	yes	Freshman
	3	yes	Freshman		0	yes	Freshman
	2	yes	Freshman		1	yes	Freshman
	4	yes	Freshman		3	yes	Freshman
	3	yes	Freshman		1	yes	Freshman
	0	yes	Sophomore		2	yes	Sophomore
	3	no	Junior		1	yes	Freshman
	1	yes	Sophomore		5	yes	Freshman
	3	yes	Freshman		0	yes	Sophomore
	3	yes	Freshman		1	yes	Freshman
	0	yes	Freshman		3	no	Junior
	0	yes	Freshman		2	no	Freshman
	7	no	Sophomore		2	yes	Freshman
	0	yes	Freshman		0	yes	Freshman
	2	yes	Freshman		0	yes	Freshman
	0	yes	Freshman		2	yes	Freshman
	2	yes	Junior		2	yes	Freshman
	0	no	Freshman		2	yes	Freshman
	5	no	Sophomore		2	yes	Freshman
	2	yes	Freshman		2	yes	Freshman
	3	yes	Freshman		0	yes	Sophomore
	4	no	Junior		2	yes	Freshman
	2	yes	Sophomore		0	yes	Freshman
	2	yes	Freshman		0	yes	Freshman
	1	yes	Freshman		1	yes	Junior
	2	no	Sophomore				
	1	yes	Freshman				

APPENDIX J

The Scheffé Argument for Mean Comparisons

THE SCHEFFÉ ARGUMENT FOR MEAN COMPARISONS

The Scheffé method for finding significance of difference between means, following an analysis of variance in which a significant F was obtained, involves a number of steps. Basically, this method has two advantages over the standard "t" test for mean comparisons: (1) it allows for comparisons of multiple means; (2) it incorporates the mean square of within groups as the estimated variance, rather than the standard deviation from the mean used in the "t" test. This particular operation makes the Scheffé test more rigorous than the "t" test in exposing significant differences. The estimated variance for all groups compared in the analysis of variance technique is mathematically more rigorous than the estimated variance for just the groups compared.

Steps to the Scheffé Argument:

1. Find s: In order to compare multiple means the formula derived by Scheffe is as follows:

$$d = a_1 M_1 + a_2 M_2 + a_3 M_3 + \cdots + a_n M_n$$

where d is the difference between the multiple means compared.

$M_1, M_2 \cdots M_n$ are means.

a_1, a_2, a_3 are arbitrary constants with the condition that

$$a_1 + a_2 + a_3 \cdots + a_n = 0$$

Therefore to compare means M_1, M_2, M_3 WITH M_4, M_5, M_6, d is determined by:

$\frac{1}{2} M_1 + \frac{1}{2} M_2 + \frac{1}{2} M_3 + (-\frac{1}{2}) M_4 + (-\frac{1}{2}) M_5 + (-\frac{1}{2}) M_6$ which is equal to: $\frac{1}{2}(M_1 + M_2 + M_3) - \frac{1}{2}(M_4 + M_5 + M_6)$

And $s = \frac{d}{sd}$

Where $sd = \sqrt{MS_W \left(\frac{a_1^2}{n_1} + \frac{a_2^2}{n_2} + \frac{a_3^2}{n_3} + \cdots \frac{a_n^2}{n_n} \right)}$

In the preceding equation, the squares of $a - a$ etc. are used because of the principle that if a variable is multiplied by a constant, then the variance is multiplied by the square of the constant.

Therefore $$s = \frac{\frac{1}{2}(m_1 + m_2 + m_3) - \frac{1}{2}(m_4 + m_5 + m_6)}{\sqrt{MS_w\left(\frac{1}{n_1} + \frac{1}{n_2} + \frac{1}{n_3} + \frac{1}{n_4} + \frac{1}{n_5} + \frac{1}{n_6}\right)}}$$

Where $\frac{1}{4} = \partial_1^2 = \partial_2^2 = \cdots = \partial_6^2$

$$s = \frac{\frac{1}{2}(m_1 + m_2 + m_3) - \frac{1}{2}(m_4 + m_5 + m_6)}{\sqrt{\frac{MS_w}{4}\left(\frac{1}{n_1} + \frac{1}{n_2} + \frac{1}{n_3} + \frac{1}{n_4} + \frac{1}{n_5} + \frac{1}{n_6}\right)}}$$

2. Find F: For the mean comparisons performed by allowing K - 1 to serve as the numerator term for degrees of freedom; the denominator term for degrees of freedom is then found by K (N - 1). The F value derived from these degrees of freedom is used to obtain t'.

3. Compare s with t', where t' = $F(K-1)$

4. If s is greater than or equal to t', then the difference between means is significant.

   If s is less than t', then the difference between means is not significant.

   (13:265-270)

APPENDIX K

Tables

TABLE III

RAW SCORES FOR PRE-AND POST-PERSONAL DISTANCE TESTS

Group	Pre-test Scores	Post-test Scores	Group	Pre-test Scores	Post-test Scores
Bowl-ing	391	381	Condi-tioning	450	320
	309	309		430	280
	364	390		390	230
	391	381		490	420
	391	464		460	280
	373	391		400	370
	400	355		380	300
	445	382		370	270
	518	436		420	270
	436	400		400	280
	418	427			
Folk Dance	396	404	Volley-ball	497	393
	430	407		441	410
	322	326		517	459
	426	419		455	493
	444	422		476	517
	504	437		583	517
	481	419		421	417
	515	515		593	544
	456	433		459	497
	485	389		538	493
	422	374		486	428
	504	433		517	486
	389	370		486	407
	422	389		617	559
	459	456		507	441
	496	470		438	431
	467	481		455	466
	374	341		541	469
	496	419		507	421
	467	400		552	476
	363	389		597	562
	530	474		528	455
	411	344		486	503
	404	396		507	497
	411	315		569	428
	415	396		526	528
	467	419		528	462
				545	452
				514	483

TABLE IV

DISCREPANCY SCORES

Group	Score	Group	Score
Bowling	10	Conditioning	130
	0		150
	-26		160
	10		70
	-73		180
	-18		30
	45		80
	63		100
	82		150
	36		120
	- 9		
Folk Dance	- 8	Volleyball	104
	23		31
	- 4		58
	7		-38
	22		-41
	67		66
	62		4
	0		49
	23		-38
	96		45
	48		58
	71		31
	19		79
	33		58
	3		66
	26		7
	-14		-11
	33		72
	77		86
	67		76
	-26		35
	56		73
	67		-17
	8		10
	96		141
	19		- 2
	48		66
			93
			31

TABLE XVIII

MEANS AND STANDARD DEVIATIONS OF PRE-AND POST-PERSONAL DISTANCE SCORES FOR FOUR PHYSICAL ACTIVITY CLASSES

Class	Pre-Test Mean	Post-Test Mean	Pre-SD	Post-SD
Bowling	403.272	392.363	52.915	41.246
Conditioning	419.000	302.000	38.427	55.337
Folk Dance	442.814	408.777	51.063	47.250
Volleyball	513.310	472.206	49.909	45.871

TABLE XIX

MEANS AND STANDARD DEVIATIONS OF DISCREPANCY PERSONAL DISTANCE SCORES GROUPED ACCORDING TO OUTSIDE RELATION TO CLASS AND SKILL LEVEL

Group	Mean	Standard Deviation
"yes" ORC and A Skill	61.692	57.176
"no" ORC and A Skill	89.750	21.140
"yes" ORC and B or C Skill	25.789	43.907
"no" ORC and B or C Skill	50.888	34.879

TABLE XX

MEANS AND STANDARD DEVIATIONS OF PRE-AND POST-PERSONAL DISTANCE SCORES ACCORDING TO CLASSIFICATION

Group	Pre-test Mean	Post-test Mean	Pre-SD	Post-SD
Freshmen	464.547	427.880	60.213	61.300
Sophomores	451.400	401.520	72.638	80.432
Juniors	467.200	405.800	69.051	87.637