

A STUDY OF PEER SOCIAL ACCEPTANCE AS RELATED TO THE  
MODIFIED AAHPER YOUTH FITNESS TEST

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A Thesis

Presented to

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and Recreation and the Graduate Council  
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In Partial Fulfillment

of the Requirements for the Degree

Master of Science

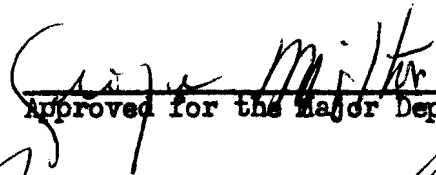
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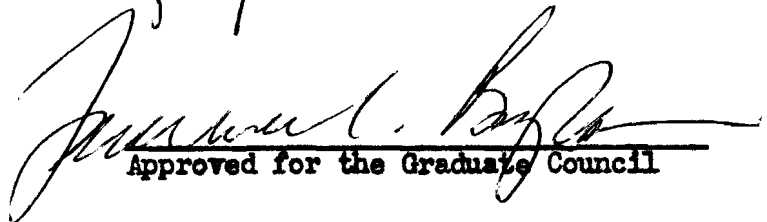
by

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## Chapter 1

### INTRODUCTION

In the complex society of the 1970's, it is of utmost importance that all students be not only skilled physically but also socially adjusted and socially accepted.

Psychologists tell us that it is extremely important for the individual to attain status among his peers, and more so that this acceptance is generally recognized as being a decisive factor in his total personality makeup. Likewise, psychological studies indicate that the individual with superior intelligence is often the most physically capable and the best adjusted individual.

In order to serve all pupils effectively the problems of the socially maladjusted students must be met. Studies have shown that lack of participation in group activities and not having friends contributes to personal insecurity and isolation. Physical educators have been concerned for some time with sociological outcomes and although it is difficult to estimate what is being accomplished in the area of physical activity since there have been no means by which to measure social behavior and social interaction. It is the hope of concerned physical

educators that the social interaction is a positive result for students.<sup>1</sup>

The physical educator has come to realize that physical ability is not enough; rather, a strong relationship between the social and physical aspects needs to be stressed in the physical education program. Thus, only when the physical educator provides for the total social aspect of the individual does the physical educator take full responsibility for the total education of students.

## THE PROBLEM

### Statement of the Problem

The purpose of this study was to investigate the relationship, if any, between physical fitness and social acceptance of ninth, tenth, and eleventh grade male and female students.

### Statement of the Hypothesis

There is no significant difference between individuals that score high on a modified version of the American Association for Health, Physical Education, and Recreation Fitness Test and social acceptance.

## IMPORTANCE OF THE STUDY

According to the literature in the late 1940's and early 1950's, the relationship of physical skill and popularity was in fact shown to be the case. However, as nearly two decades have passed since this

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<sup>1</sup>Elvera Skubic, "A Study in Acquaintanceship and Social Status in Physical Education Classes," The Research Quarterly, XI (March, 1949), 83.

work, and as our knowledges and understandings about both fitness and social acceptance have steadily progressed during this span, a need arises to reexamine this relationship. Hopefully such investigation will yield further evidence about man in his world and his relationship to others.

For example, in the area of fitness, definitions which accurately describe fitness have been slow in coming from the early 1940's and 1950's. Lt. General L. Bohannon points out that fitness as applied to physical conditioning was vaguely defined in the past. To illustrate this point, the ability to do forty push-ups or sixty sit-ups or twenty chinings was not understood in the concept of general fitness. To some people fitness was merely freedom from disease; others measured fitness by the degree of muscular development. Still others included psychological well-being as an essential element.<sup>2</sup> But recently AAHPER has attempted to bridge the gap between the past understanding of fitness and a contemporary view.<sup>3</sup> This study will therefore attempt to reexamine and update the work previously undertaken, in light of recent trends in fitness and social acceptance.

There appears to be a dearth of sociological information related to physical education. However, such a sociological device as

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<sup>2</sup>Kenneth H. Cooper, M. D., Aerobics (New York: M. Evans, Inc., 1968), p. ix.

<sup>3</sup>NOTE: The American Association for Health, Physical Education standardized fitness tests is a Youth Fitness Test designed to test basic physical components of fitness through performance. By use of national standards the norms shown in the AAHPER Youth Fitness Test Manual, the test performance results of boys and girls from the age of ten and of young men and women to age thirty can be compared and individual achievement determined.

sociometric testing appears to be able to provide substantial information of importance to physical education. For one thing, a study of this nature appears to give possible insight into the relationship that exists between a student, his abilities, and his peers, and at the same time to suggest possible remedial practices that might be instituted to alleviate somewhat the social shortcoming of students. Whatever the case, there exists a definite need for more sociometric testing in physical education, and this study purports to do exactly that: to utilize sociometric testing in determining the social status of individuals and to relate the findings in such a manner as to determine if their physical abilities account for social success.

Such investigation is important because one will be able to see the significance of the participant and to determine whether he is accepted into the group as a social equal or is cast alone as an outsider--a reject or failure. This aspect, if not handled with proper skill by the physical educator, will leave a scar or impression on the individual, possibly for the duration of his life. Thus, it is imperative in the field of physical education that one aid and help the outsider to become a social equal.

Additionally, the author feels that psychological factors play an important role in the development and maturation of an individual and that these psychological factors can be felt in physical education classes. For example, it appears that the early maturing individual has the best potential for doing well on physical tests and at the same time is highly accepted by his peers.

An important thing is that the physical educator at least attempt to meet not only the physical needs, but the social needs of the individual as well.

#### LIMITATIONS OF THE STUDY

This study was limited to the boys and girls in the ninth, tenth, and eleventh grade classes at Painesville Harvey High School, Painesville, Ohio. The study does not take into consideration the previous friendships formed in or outside the school day. Also, the sophomore and junior students have developed more concrete relationships among their peers than the freshmen students. All the students were limited on their sociometric questionnaire to choosing only students in their particular physical education class, and not to any three students in the school. Attitudes toward physical education, health status, current physical fitness status, and the amount of physical handicap were uncontrollable factors.

#### DEFINITION OF TERMS

##### Isolate

Not choosing and being unchosen on any criterion. He does not send out or receive any negative choices. His sociometric score is zero.<sup>4</sup>

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<sup>4</sup>J. L. Moreno, Who Shall Survive? (Beacon: Beacon House Inc., 1953), p. 720.

### Physical Fitness

Technically, physical fitness involves measures and levels of muscular strength and endurance, muscle tone, heart action and response to activity, agility, balance, and co-ordination.<sup>5</sup>

### Sociometric Questionnaire

Requires an individual to choose his associates for any group of which he is or might become a member.<sup>6</sup>

### Sociometric Test

An instrument to measure the amount of organization shown by social group. The sociometric test requires an individual to choose his associates from any group of which he is or might become a member. He is expected to make his choices without restraint.<sup>7</sup>

### Sociometry

Is concerned with the measurement of interpersonal preferences among the members of a group in reference to a stated criterion.<sup>8</sup>

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<sup>5</sup> Royal Canadian Air Force, Royal Canadian Air Force Exercise Plans for Physical Fitness (Ottawa, Canada: Queen's Printer, 1962), p. 5.

<sup>6</sup> Moreno, op. cit., p. 719.

<sup>7</sup> J. L. Moreno, Who Shall Survive? A New Approach to the Problem of Human Interrelations (Washington: Nervous and Mental Disease Publishing Co., 1934), p. 719.

<sup>8</sup> Merl E. Bonney and Richard S. Hampleman, Personal-Social Evaluation Techniques (Washington: The Center for Applied Research in Education, Inc., 1962), p. 60.

## Chapter 2

### REVIEW OF THE LITERATURE

Research has indicated that physical education contributes values in fostering desirable sociability traits. Studies have been reported utilizing sociometric techniques to determine social status among physical education students. However, a study related directly to the AAHPER Youth Fitness Test and social acceptance could not be located. Therefore, the literature concerned with this study is divided into two sections: sociometric testing, as related to social acceptance; and physical ability, as related to the AAHPER Youth Fitness Test.

### SOCIOMETRY TESTING

#### The Start of Sociometry

Sociometry is a relatively new field, having been in existence for three decades. However, since its inception in the thirties, the field has gained increased momentum and today is considered a vital force in delimiting social problems. The term sociometric was popularized by the psychologist, J. L. Moreno, in 1933. Sociometry introduced quantitative methods into social science. Sociometric attempts, to analyze populations through a mathematical study of psychological properties.

Apparently, Moreno is credited with having devised the first sociometric system, in the thirties, (1934), in his work entitled, Who Shall Survive?

Moreno states that the official start of the sociometric movement occurred on April 3 through 5, 1933, when a few dozen sociometric charts were exhibited by the Medical Society of the State of New York during a convention.<sup>1</sup>

However, Moreno contends that although this may have been the official start of the movement, the conceptual origin occurred ten years earlier in 1923, with the publication of his book, Das Stegreiftheater.<sup>2</sup> Apparently, this work contained the seeds of many of the ideas which later attained fame under the name of sociometry.

Also, Moreno divides the sociometric movement into a number of distinct periods: the first, the axionormative period, lasting from 1911 to 1923; and the second, the sociometric period, having three phases and ending in 1952, the year that saw sociometry spread throughout the United States, Europe, and the rest of the world.<sup>3</sup>

An example of sociometry testing pupils from kindergarten through the eighth grade in the public school system of Brooklyn, New York, were requested to choose two classmates they preferred to have sit near them. The first findings were that some pupils had a large number of choices as companions, others had no choice; and others ranged between these two extremes. It was also revealed that the

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<sup>1</sup>J. L. Moreno, Who Shall Survive? (Beacon: Beacon House, Inc., 1953), p. xiii.

<sup>2</sup>Ibid., p. xiv.

<sup>3</sup>Ibid.



teachers were only partly aware of the following: mutual friendship, small pupil cliques, a sexual cleavage between boys and girls and other facets from the choosing among the pupils. This technique for evaluating the extent to which a person is accepted by his peers and for determining the internal social structure of the group was called by its originator, Jacob L. Moreno, a sociometric test. The term sociometry was derived from a Latin phrase and means social or companion measurement.<sup>4</sup>

Certain reactions are measured and evaluated by sociometry. "Every human being responds spontaneously to every other human being with whom he comes into face-to-face contact. He likes that person, or dislikes him, or can't see him."<sup>5</sup>

However, the whole field of sociometry includes not only measurement techniques but also "methods and principles to be followed in making groups more effective in pursuit of their goals and more personally satisfying to their members."<sup>6</sup> The value of sociometry, herein, lies in that it provides a source for understanding individual personalities.

It provides a practical way to measure the interpersonal structure of any group; it helps to clarify the web to relationships in which we all live every day. Sociometric investigation generally reveals progressively (1) the extent of any individual's acquaintance; (2) his social contacts; (3) those to whom he is

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<sup>4</sup>Norman E. Gronlund, Sociometry in the Classroom (New York: Harper and Brothers, 1959), p. 1.

<sup>5</sup>Rose Cologne, "Sociometry: The Study of Human Relations," Journal of Home Economics, XXXVII (December, 1954), 625.

<sup>6</sup>Merl E. Bonney and Richard S. Hampleman, Personal-Social Evaluation Techniques (Washington: The Center for Applied Research in Education, Inc., 1962), p. 60.

attracted and who are attracted to him; those he rejects and who rejects him, and those who are indifferent to him; (4) his motivations and (5) the interaction of his emotions and the roles he assumes or wants to assume.<sup>7</sup>

The goal of all sociometry should be to develop an individual's emotional expansiveness, for example, to increase the number of persons towards whom he may feel warmly and with whom he may willingly cooperate. To achieve this goal the individual must first experience satisfying interpersonal relations by working and playing with persons whom he likes.

If it is the teacher's intention to assist various individuals in class, it would seem necessary for him not to know with whom they do associate, but rather those with whom they would like or prefer to associate to bring about more satisfying relationships. Herein lies the value of the sociometric test.

The sociometric test is an instrument to measure the amount of organization shown by groups. This questionnaire asks that an individual choose his associates for any group of which he is or might become a member. By taking the results of the group and computing the number of times each individual is chosen as an associate, it is possible to determine the place of each individual in the group.<sup>8</sup>

A number of sociometric tests or devices are available for making gross measurements of the social structure of the class. For example, a simple sociometric test would be to ask each student to list the person he likes the best or the person he likes the least in the class. After gathering this information, the teacher can rank all of

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<sup>7</sup>Cologne, loc. cit.

<sup>8</sup>Elvera Skubic, "A Study in Acquaintanceship and Social Status in Physical Education Classes," The Research Quarterly, XX (March, 1949), 81.

the students by the number of times they were chosen as most liked and least liked. It can also be determined who chooses whom. The students are usually asked their first, second, and third choices of the persons by whom they wish to sit. Either a chart or a sociogram is constructed to plot the data obtained.<sup>9</sup>

A similar type of sociometric test used is that which utilizes specific-choice criteria. In utilizing this method (specific criterion of choice), a teacher may ask the students to respond to one of the following questions which is pertinent to a need in a particular class, such as: "Which in forming discussion groups in social studies?"; "Which in putting on a one-act play?" Criteria of a much more personal nature may be used at other times, such as: "Which other pupils would you prefer to have in your play group?"<sup>10</sup>

Apparently, the chief value of a specific-choice criterion as presented above is that it can be acted upon to make changes in the social arrangement of a group. Such data or information could be utilized for forming subgroups within a class. Moreno insists that a genuine sociometric test must be one which is specific to a particular situation and which is used as a basis for making changes in accord with the expressed desires of the group members.<sup>11</sup> Not only can the sociometric test be used to analyze the interaction patterns of a particular group, it can also be used as a device for forming new groups. Thus,

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<sup>9</sup>Frederick J. McDonald, Educational Psychology (2d ed.; Belmont, California: Wadsworth Publishing Co., Inc., 1965), pp. 631-633.

<sup>10</sup>Bonney and Hampleman, op. cit., p. 61.

<sup>11</sup>Bonney and Hampleman, op. cit., pp. 61-62.

the sociometric test is useful as a guide to planned social change and also as a tool for research.<sup>12</sup>

Flotow made an early attempt to use sociometric tests in an elementary school in New Lenox, by giving a sociometric test to one hundred thirty-five children in grades four through eight inclusive. This test indicated the social relationships of the children with one another. The results of the test were tabulated, graphs were constructed; sociograms showing the mutual relationships of the children were drawn, and an attempt was made to identify some of the major factors having a bearing on the social status scores of the children. The test was found to be an effective means of measuring and interpreting the childrens' social relationship within each classroom.

Procedures asked on the questionnaire were: (1) With whom would you like best to play? (2) With whom would you like best to work? (3) Whom would you like best to sit next to you? The children were assured of complete secrecy in the handling of the information which they gave. This assurance was felt necessary, especially to not infringe upon any ones right, et cetera.

It was concluded that the sociometric test is no panacea for the social ills of the classroom; it is merely an instrument for diagnosing some of the ills. At least it is a fairly accurate quantitative

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<sup>12</sup>Alvin W. Gouldner and Helen P. Gouldner, Modern Sociology (New York: Harcourt, Brace and World, Inc., 1963), p. 355.

measurement tending to equate the number of social relationships with social happiness.<sup>13</sup>

Numerous studies have been done comparing the social acceptability of students with other human attributes. Bretsch compared the social skills and the activities of adolescent students to social acceptability. The researcher used six hundred ninety-six ninth grade boys and girls for the study. To measure social acceptability, each pupil was asked to write the names of the pupils in his own classroom with whom he would like to associate in carrying on each of the following six activities: (1) attend movies, (2) go for a walk, (3) make things, (4) play outdoor games, (5) play indoor games, and (6) study homework. To measure social skills, the students were asked to indicate on a form how well he felt he could perform each of eight social skills. The correlation between social skills and social acceptance was .16 for boys and .14 for girls, which was quite low. The researcher also gathered information on the activities in which the student had participated in during the past year. It was found that the relationship between social acceptance and the number of activities participated in was significantly positive, though low. In all cases, more of the well-accepted indicated that they could perform social skills average and above. Also, in over half of the activities, significant

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<sup>13</sup>Ernest A. Flotow, "Charting Social Relationships of School Children Public Schools New Lenox, Illinois," The Elementary School Journal, XLVI (May, 1946), 498-504.

differences were found between the well-accepted and the poorly accepted.<sup>14</sup>

In addition, Gronlund and Whitney found the sociometric status in the classroom is a fairly reliable index of the general social acceptability of pupils among their peers. The population for this study consisted of three hundred forty junior high school pupils. The students were asked these questions: (1) Name five pupils in this class near whom you would most like to sit? (2) If you could choose any five pupils in the junior high school to be in your class next year, name five you would like as classmates? and (3) Name five junior high school pupils with whom you would most like to play with in your neighborhood.

Sociometric results were analyzed by tabulation of the number of times each pupil was chosen on each criterion. Thus, each individual's social acceptability was determined by counting the number of choices he received from classmates as seating companions, future classmates, and neighbors.

Thirty-eight to forty per cent of the students went outside the class on the last two criteria.

The relationship between pupils' social acceptability in the classroom, in the school, and in the neighborhood was determined by correlating the pupils' sociometric scores for each of the three situations. The correlation coefficients ranged from .67 to .78.<sup>15</sup>

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<sup>14</sup>Howard S. Bretsch, "Social Skills and Activities of Socially Accepted and Unaccepted Adolescent," Journal of Educational Psychology, XLIII (December, 1952), 449-458.

<sup>15</sup>Norman E. Gronlund and Algard P. Whitney, "Relationship Between Pupils Social Acceptability in the Classroom, in the School and in the Neighborhood," The School Review, LXIV (September, 1956).

RELATED RESEARCH TO SOCIAL STATUS  
AND PHYSICAL ABILITY

Personal and Social Achievements  
in Athletics

Studies indicate that socially well-adjusted persons are apt to be more successful in athletics. Physical activities appear to carry with them a good deal of social status and esteem within the group situation. Coleman gave a number of experimental findings supporting this idea: He sought to answer the following questions: "What is the relative status of the boy who is only an athlete, the one who is only a scholar, and the one who is both?" When the students were to make choices as someone to be friends with or be like, his discoveries were:

(1) The athlete scholar received over three times as many choices as the scholar who is not an athlete, and over one-half times as many as the athlete who is not a scholar.

(2) The boy who is neither athlete nor scholar received little recognition.

It was concluded that athletic stardom stands highest as a symbol of success. As a means of entry into the crowd, as a way to gain popularity with the girls, and as the man with the most friends.<sup>16</sup>

A study by Biddulph compared the personal and social adjustment of high school boys of high athletic achievement with the adjustment of boys of low athletic achievement. The results illustrated that students ranking high in athletic achievement demonstrated a significantly

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<sup>16</sup>J. S. Coleman, The Adolescent Society (Free Press: Glencoe, New York, 1961), p. 147.

greater degree of personal and social adjustment than did students ranking low in athletic achievement. Therefore, it was concluded that it was important for all boys, not just a select few, to develop motor ability. It was suggested that more emphasis should be placed upon intramural athletic activities rather than upon interscholastic activities which neglect the majority of boys and favor only a selected few.<sup>17</sup>

A study similar to Biddulph by Yarnall which had a test administered to seventy-five male high school seniors determined the relationship of physical fitness to popularity. In addition, a sociometric measure of popularity and a questionnaire concerning out-of-class activities were administered. It seemed that subjects with high fitness scores were significantly more popular and were significantly more fit. The most popular boys were more active in clubs and organizations and held more offices. These same boys tended to be athletes, participated more in intramurals, and read fewer magazines than the least popular students.<sup>18</sup>

During a study utilizing a sociometric test, McGraw and Tolbert had each student to name the three boys he liked best in his own class, the three in his own grade, and the three in the entire school. Therefore, three separate status scores were obtained on each individual. The three status scores were namely one for his status in the entire

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<sup>17</sup>Lowell G. Biddulph, "Athletic Achievement and the Personal and Social Adjustment of High School Boys," The Research Quarterly, XXV (March, 1954), 1.

<sup>18</sup>Charles C. Yarnall, "The Relationship of Physical Fitness to Selected Measures of Popularity," Completed Research in Health, Physical Education, and Recreation, VII (1965), 98.



school. McGraw and Tolbert concluded that there seems to be a moderately high relationship between sociometric status and athletic ability in almost all of the groups studied. Also, it may be a fact that the boys achieved their popularity through participation in interschool athletics. Therefore, by encouraging athletic participation by all boys will help greatly to improve social status, presumably a desirable goal of education.<sup>19</sup>

McGraw and Tolbert state in their study that there have been many studies of social interaction in both school and non-school environments since the innovation of the sociometric test. Apparently, there were reported both substantiating and conflicting results regarding the factors which are important in determining the extent to which individuals gain or fail to gain status in the group. The purpose of their study, therefore, was to investigate the relationship between sociometric status and general athletic ability among junior high school boys and the extent to which this relationship compares with that between sociometric status and mental maturity.<sup>20</sup>

#### Personal and Social Achievements in Physical Education

Social acceptability can be enhanced by physical educators in their respective classes. In a study by Breck, the relationships between acquaintanceship and social status in physical education classes was measured. A sociometric questionnaire asked each subject to print

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<sup>19</sup>L. W. McGraw and J. W. Tolbert, "Sociometric Status and Athletic Ability of Junior High School Boys," The Research Quarterly, XXIV (March, 1953), 73-80.

<sup>20</sup>Ibid., p. 72.

in order of preference the names of five girls she would most prefer to have as members of her team on the basis of skills, and five she would least like to have on her team. In addition, she was asked to print the names of the girls she would most prefer to have as friends and the five she would least.<sup>21</sup>

Two practical methods were employed in computing the data: (1) one point was assigned to expression of choice; (2) one point was subtracted to each choice of rejection. The conclusion was that the sociometric test has high reliability. The literature and findings of this study show that the sociometric method of measuring status gives evidence of being highly applicable to physical education.<sup>22</sup>

Breck suggested that sociometric techniques are applicable in physical education classes. Two volleyball classes in the women's division of physical education at the University of California at Los Angeles, were chosen for the study. The enrollment was thirty-seven in one class and thirty-one in the other. Sixty-four students were present for all the tests and constituted the subjects for the study. The experiment was conducted during the last four weeks of the semester.

The students are requested to list the five classmates they most preferred to have as a teammate. A teammate status score was the number of times an individual was chosen as a teammate. The teammate status, as measured by student choices, is as closely related to teacher judgment of skills in volleyball as are scores on the French volleying

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<sup>21</sup>Sabina June Breck, "A Sociometric Measurement of Status in Physical Education Classes," The Research Quarterly, XXI (May, 1950), 81.

<sup>22</sup>Skubic, op. cit., p. 83.

test. The volleyball test scores correlated .54 with the scores of teammates status, while the scores of teammate status correlated .71 with the rating of skill by the teachers.<sup>23</sup>

Walters' study, "A Sociometric Study of Motivated and Non-Motivated Bowling Groups," was an analysis of motivated and non-motivated groups in a seven-week bowling class. It appears that both groups became more socially adjusted as a result of group participation and acquaintance. However, the motivated group became better adjusted than the non-motivated group. A comparison of social adjustment ratings between good and poor bowlers showed the good bowlers to be the better accepted members of the group. It concluded the following results:

(1) Motivated groups are more closely knit than non-motivated.

(2) Groups become more closely integrated socially as a result of acquaintance and group participation.

(3) The better performer is a better accepted member of the group than the poor performer.<sup>24</sup>

#### Sociometric Questionnaire Versus an Inventory Type Instrument

In H. Harrison Clarke's and David H. Clarke's study, the sociometric questionnaire was administered to boys nine through eleven years of age. The questionnaire asked each boy to list the boys in his home-room who were his friends and with whom he would like to associate--

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<sup>23</sup>Ruth E. Fulton, "Relationship Between Teammate Status Measures of Skill in Volleyball," The Research Quarterly, XXI, 3 (October, 1950), 274.

<sup>24</sup>C. Etta Walters, "A Sociometric Study of Motivated and Non-Motivated Bowling Groups," The Research Quarterly, XXVI (March, 1955), 107-12.

attend movies, play sports, study homework, and invite to a birthday party.<sup>25</sup>

The Clarkes derived their personal and social adjustment criteria from the above sociometric questionnaire and an inventory-type instrument, the Mental Health Analysis. Positive relationships between peer status and body size and muscular strength were found when the sociometric questionnaire was used. However, the results were conflicting and contrary to those with the sociometric questionnaire when the inventory-type instrument was used.<sup>26</sup>

#### AAHPER Youth Fitness Test

For another study, the AAHPER Youth Fitness Test was given to one hundred sixty-five girls and one hundred eighty-five boys in grades ten and eleven by Douthitt. The subjects were divided into five matched groups for each sex on the basis of composite scores. Both the control and experimental groups were retested twice under one of the following incentive conditions: team competition, level of aspiration, competition with a person of equal ability, and competition with a person of markedly different ability. The results were that the level of aspiration proved more effective than team competition or competition

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<sup>25</sup>H. Harrison Clarke and David H. Clarke, "Social Status and Mental Health of Boys as Related to Their Maturity, Structural, and Strength Characteristics," The Research Quarterly, **XXXII** (October, 1961), 327.

<sup>26</sup>Ibid., p. 326.

with an equal, and the reliability of the tests varied with the motivating conditions.<sup>27</sup>

Similarly, Ward administered the AHPER Youth Fitness Test to seven hundred eighty-four junior high boys in a study. Boys designated as "fit" scored at or above the 85th percentile, and boys designated as "unfit" scored at or below the 35th percentile. The following material was used to compare the two groups: intelligence as measured by the Otis Quick-Scoring Test of Mental Ability, academic achievement, social efficiency as measured by the Blanchard Behavior Rating Scale, acceptance by peers as measured by the Cowell Personal Distance Ballot, school attendance, overweight or underweight. The results were that the boys designated as "fit" averaged higher in mental ability, were more accepted by their peers, tended to possess a higher degree of social efficiency, missed fewer days of school, drove automobiles more frequently, participated more in sports, tended to have more dates, joined more out-of-school organizations, held more leadership positions, and tended to be slightly underweight.<sup>28</sup>

### Summary of Studies

The studies reviewed in this chapter were concerned with sociometric testing, social acceptance and its relationship with physical abilities. Sociometric testing has been used quite extensively to

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<sup>27</sup> John E. Douthitt, "Effects of Specific Social-Incentive Conditions on Performance on Physical Fitness Tests," Completed Research in Health, Physical Education, and Recreation, VII (1965), 60.

<sup>28</sup> James E. Ward, "The Relationship Between Physical Fitness and Certain Psychological, Sociological, and Physiological Factors in Junior High School Boys," Completed Research in Health, Physical Education, and Recreation, VII (1965), 38.

determine interpersonal relationships that exist between students. It has been recognized as a valuable instrument for diagnosing social ills and in understanding individual personalities. Several studies were presently showing a relationship between social status and physical abilities.

Sociometric status has been studied in relationship to participation in athletics, physical fitness, and selected physical abilities in physical education classes. All studies, in varying degrees, have shown significant relationships between social status and physical abilities.

## Chapter 3

### PROCEDURES

The purpose of this study was to investigate the relationship, if any, between physical fitness and social acceptance of ninth, tenth, and eleventh grade students. The comparison was made to test the hypotheses that there is no significant difference between individuals that score highest on a modified version of the American Association for Health, Physical Education, and Recreation Fitness Test and social acceptance.

The American Association for Health, Physical Education, and Recreation National Fitness Test was given to all ninth, tenth, and eleventh grade physical education students at Thomas W. Harvey High School in the 1969-1970 school year. The school is located at 167 West Washington Street, Painesville, Ohio. The test was administered in two gymnasiums. The girls completed the test in the girls' gymnasium and the boys completed the test in the boys' gymnasium. The six items of the test which were presented to the students were: pull-ups (flexed-arm hangs for girls); sit-ups, shuttle runs, standing broad jumps; 50-yard dashes; and the 600-yard run-walks.

One week after the physical fitness testing, the Moreno's Near Sociometric Test was given to the subjects.

## SUBJECTS

The subjects for this study were ninth, tenth, and eleventh grade male and female students of Thomas W. Harvey High School in Painesville, Ohio. The study included subjects ranging in age from thirteen to eighteen years and in grades nine through eleven.

All ninth graders were enrolled in physical education three times a week for forty-five minute periods; all tenth and eleventh graders have physical education twice a week for forty-five minute periods. The number of students and the times they met are listed in Tables 1 and 2.

The male subjects wore two-piece gym suits. The white, short-sleeved shirt had printed on it in red, "Harvey," a number, and a block in which each student had written their name. The white, short gym trunks had the same description on them as the shirt. The subjects also wore white socks and tennis shoes with their numbers printed on the sides of the shoes. The numbers ranged from one to five hundred.

The female subjects wore one-piece, short-legged, blue gym suits. The suits were of a jump suit fashion with snaps down the front and a slip belt. The students wore white socks and tennis shoes. Although no emblems were affixed to the girls' suits, their names were sewn on the back and on top of the front pocket with their gym locker number. Their gym locker number also appeared on the sides of their tennis shoes.



Table 1

## Boys' Physical Education Instructor's Schedule

Period	Days	Number	Grade
1	Mon., Wed., Fri.	28	9
1	Tues., Thurs.	29	10-11
2	Mon., Wed., Fri.	31	9
3	Mon., Fri.	31	10-11
3	Tues., Wed.	25	10-11
4	Mon., Wed., Fri.	38	9
4	Tues., Thurs.	55	10
6	Mon., Wed., Fri.	25	9
7	Mon., Wed., Fri.	36	9
7	Tues., Thurs.	48	10
8	Mon., Wed.	41	10-11

Table 2

## Girls' Physical Education Instructor's Schedule

Period	Days	Number	Grade
1	Mon., Wed., Fri.	29	9
2	Mon., Wed.	36	10-11
2	Tues., Thurs., Fri.	38	9
3	Tues., Thurs.	38	10-11
4	Mon., Wed., Fri.	40	9
4	Tues., Thurs.	35	10-11
5	Mon., Wed., Fri.	40	9
5	Tues., Thurs.	32	10-11
6	Mon., Wed.	33	10-11
6	Tues., Thurs.	33	10-11
7	Mon., Wed., Fri.	40	9
7	Tues., Thurs.	36	10-11

## FACILITIES AND EQUIPMENT

Thomas W. Harvey High School has two gymnasiums--the boys' gymnasium is eighty-seven feet and nine inches by ninety-three feet; and the girls' gymnasium is seventy feet by forty-eight feet.

The equipment employed for the first segment of the test for the boys' pull-ups was a metal chin bar. This bar was devised to accommodate three individuals simultaneously. The equipment employed for the first segment of the test for the girls' flexed-arm hang was one adjustable bar. A stop watch was used in measuring the performance of the subjects.

The equipment for the sit-up portion of the test were two floor mats, four feet wide and eight feet long. There were two mats of this size in each of the gymnasiums. The mats were placed side by side to facilitate the ease for scoring and control of the students for the recorder.

The shuttle run had two lines marked with one-inch red masking tape. The line was measured to five yards in length, thirty feet apart. These lines were taped in each of the gymnasiums.

In addition, four wooden blocks, two inches by two inches, were used in each gymnasium. The stop watch was also used to measure the subject's performance.

The standing broad jump utilized two floor mats, four feet by eight feet. One mat was placed in each gymnasium. The take-off line was marked two feet behind the floor mat. A ninety-six inch tape was fastened to the floor mat with a three-inch clear plastic tape.

Two subjects were tested on the modified indoor track simultaneously during the 50-yard dash with a stop watch which could record two timings. The indoor track was located beneath the girls' gymnasium. This track measures 440 yards.

The 600-yard run-walk was performed by all subjects in the boys' gymnasium. Masking tape measured the distances of the course. Four two-foot high cones were utilized in marking corners. In addition, stop watches were needed for timing.

#### TESTING PROCEDURE

##### Student Aid Recorders and Testers

The assistance of gym aids was used. The gym aids were seniors who had successfully completed the three-year, non-coeducational physical education program. These students had completed similar physical fitness programs, and they had exhibited above average ability in fitness activities. The selection also included that the boys be a member of the Varsity H Club also known as the lettermen's club which gives recognition for athletic achievement. Qualifications for the girls, in addition to the previous mentioned, were that they be a member of the Girls Athletic Association for two years.

These aids were given instruction about the AAHPER Test and procedures by the instructors in charge one week before the test was actually administered to the subjects. The method used to teach the gym aids were those which were recommended in the Youth Fitness Manual. The detailed explanation was given to all aids at the same time in the girls' gymnasium. This included each of the six items separately

explained. In addition, a hypothetical example for scoring was accomplished by using two of the selected gym aids as actual participants.

The American Association for Health, Physical Education, and Recreation Youth Fitness Test was given the last two weeks of January, 1970. This test was administered by Richard Kestner, the men's physical education instructor, and Miss Natalie Hessler, the women's physical education instructor. The test followed the same procedure as suggested in the "Youth Fitness Test Manual."

#### Subject's Information

The subjects were issued a test sheet and asked to list their name, grade, date of birth, height, weight, date, and the period in which the test was given. The test sheet listed the six items of the test and a space for their national and class rank. The gym aids recorded the subject's score on their test sheet at the end of each activity. (See Appendix A.)

The administration of AAHPER Tests was administered to the boys in the boys' gymnasium and to the girls in the girls' gymnasium. However, the 50-yard dash was administered to both the boys and girls on the modified indoor track. Also, the 600-yard run-walk was completed by all subjects in the boys' gymnasium.

The six items of the test which were presented to the students were: pull-ups (flexed-arm hangs for girls) for judging arm and shoulder girdle strength; sit-ups for judging efficiency of abdominal and hip flexor muscles; shuttle runs for judging speed and change of directions; standing broad jump for judging explosive muscle power of

leg extensors; 50-yard dash for judging speed; and 600-yard run-walk for judging cardiovascular efficiency.<sup>1</sup>

### Process for Testing Males

The men's physical education instructor directed the boys throughout the testing procedures. The organization of the class for testing was that of groups which were selected at random. There was no definite time element or group plan to complete each test item. The reason for this procedure, over other possible procedures, was to make the testing as enjoyable as possible for the individual subjects. The first item of the test was the pull-up given only to the boys; there was no time element. The equipment used in this test was a metal chin bar. The bar was set high enough so the subject could hang by his arms extended completely, feet free of the ground. After the subject had assumed the correct position using the overhand hold, he lifted himself until his chin was above the bar: no kicking or swinging of the feet was permitted. Once the flexed position had been assumed, he let himself down slowly until his arms were extended completely. He then followed this same procedure of chinning himself as many times as he could execute it properly. The number of completed pull-ups was recorded to the nearest whole number.<sup>2</sup>

The sit-up was the next item given to the subjects. The only equipment used were two floor mats. For this item, the subjects were

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<sup>1</sup>American Association for Health, Physical Education, and Recreation, Youth Fitness Test Manual (Washington: National Education Association, 1965), p. 7.

<sup>2</sup>Ibid., p. 16.

paired. With the subject on his back, legs extended two feet apart and his hands behind his head interlacing the fingers, elbows retracted, the subject's partner held the subject's ankles down to the mat. The subject sat up turning his trunk to the left touching the right elbow to the left knee, keeping both knees to the floor. After the subject had completed touching his right elbow with his left knee, he returned to starting position, with his elbows flat on the mat before beginning to sit up again. Sitting up with his partner still holding the ankles, he turned to the right touching the left elbow to the right knee. The subject does this exercise continuously as many times as possible, receiving one point for each time the elbow touches the knee.<sup>3</sup>

The third item given was the shuttle run. Two lines were marked on the floor thirty feet apart; behind each of these lines was placed two wooden blocks measuring two inches by two inches in size for each participant. Four subjects ran at a time, two standing on the north and two on the south lines. On the signal "Ready? Go!" the subjects ran to the opposite side picking up the block and carrying it to the opposite line placing it there and running back for the other block. A timer was on each side of the block timing each subject when he had carried both blocks to the opposite side. Two trial runs were given for better accuracy, and the best of these two was recorded.<sup>4</sup>

The standing broad jump was the next event. Each subject began with his toes just behind the take-off line. Preparing to jump, the subject was allowed to swing his arms and bend his knees in order to build up momentum. After the subject had jumped, his distance was

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<sup>3</sup>Ibid., p. 18.

<sup>4</sup>Ibid., p. 19.

measured from his heels to the take-off line by a student aid. Each subject was given three trial jumps; the best of these was recorded as his score.<sup>5</sup>

The 50-yard dash was administered on a modified track. Two subjects ran at one time. Each subject stood behind the marked starting line. At the signal given by the instructor, they ran to the finish line. A student aid timer was standing at the end of the run timing each subject with a stop watch. This stop watch registered to the nearest tenth of a second. The subjects were given three trial runs; the best of the three was recorded in his final score.<sup>6</sup>

The 600-yard run-walk had a prescribed course consisting of 25-yard sides which was established in the boys' gymnasium. One complete run consisted of 100 yards. Subjects had to complete six runs, running on the outer side of four cones placed at the four corners of the turns. Walking was permitted but the object of this activity was to cover the area in the shortest possible amount of time. Scoring was done in minutes and seconds with a stop watch. Two gym aids assisted in the timing.<sup>7</sup>

#### Process for Testing Females

The women's physical education instructor directed the girls during their testing procedures. The method of organization was the same as that used by the boys. This method was agreed upon by both directors previous to all testing.

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<sup>5</sup>Ibid., p. 20.

<sup>6</sup>Ibid., p. 21.

<sup>7</sup>Ibid., p. 23.



The first item of the test only for the girls was the flexed-arm hang. This was the only item which was modified for the girls. The girls' flexed-arm hang employed the use of the horizontal bar and a stop watch. The height of the horizontal bar was adjusted to approximately the height of the subject. With an overhand grasp, the subject raised her body so that her chin was above the bar, the elbows were flexed, and the chest was close to the bar. The subject held this position as long as possible. The stop watch was started when the subject reached the hanging position. The length of time the subject held the hanging position was recorded to the nearest second.<sup>8</sup>

The sit-ups were performed in exactly the same fashion as that of the boy subjects. However, the girls were not expected to complete as many sit-ups as the boy subjects.

The girls' shuttle run followed the same pattern as that of the boys' shuttle run. The only difference was that of their running direction. The girls ran east and west; whereas, the boys ran north and south.

The directions given for the standing broad jump were similar to the men's physical education instructor. The girls performed on identical equipment. This was the last item of the test administered in the girls' gymnasium.

The girl subjects were taken to the modified indoor track for their testing of the 50-yard dash. The gym aids signaled the subjects to begin. The women's physical education instructor recorded all the timings at the finish line.

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<sup>8</sup>Ibid., p. 17.

The girls were tested on their 600-yard run-walk, which was the last event, in the boys' gymnasium. The procedure they followed did not differ in any way from the boy subjects.

#### Administration of Sociometric Questionnaire

The Moreno's Near Sociometric Test was administered one week following the AAHPER Test. Prior to the sociometric test the subjects were verbally given their fitness test results from their individual instructors.

A form was given to the subjects asking them which classmates they preferred to be with during physical activity, in their physical education class. The instructor verbally directed the students to list the names in order of preference. (See Appendix B.)

The oral procedures which were given to each class were: (1) With whom would you like best to play with? (2) With whom would you like best to sit next to you? (3) With whom would you like best to go to the movies with? (4) With whom would you most prefer to work with in the class?

It was stressed and pointed out several times that their choices were in order of preferences. Example: First choice, best friend. Second choice, second best friend. Third choice, third best friend.

The sociometric test results were tabulated by assigning these numerical values: first choice-three points; second choice-two points; and third choice-one point. This point system was not explained to the students as it might have influenced their choices.

### TREATMENT OF DATA

The results of the American Association for Health, Physical Education, and Recreation testing at Thomas W. Harvey High School were compared with the national norms for grades nine through eleven. A table was created from the sociometric testing determining the student's social acceptability in this class. The study attempted to determine the correlation, if any, between superior physically fit students and the level of their social acceptability.

## Chapter 4

### PRESENTATION OF FINDINGS

It was the purpose of this chapter to present the data collected from the modified American Association of Health, Physical Education and Recreation Test to show, if any, a relationship with students' social acceptability. The students that participated in this study were three hundred ninety-nine females and two hundred ninety-seven males, which gave a total of six hundred eighty-eight subjects. The subjects involved in this study were male and female students in the ninth, tenth, and eleventh grades at Thomas W. Harvey High School, Painesville, Ohio.

Average national norms were gained by averaging the six American Association for Health, Physical Education, and Recreation Physical Fitness Tests to the nearest hundredth of a per cent. Class norms were established by ranking the students in their physical education classes according to their AAHPER scores. It must also be noted that whenever two or more students ranked the same in terms of the AAHPER testing, each of the students received the same class rank. Numbering was not sequential. For example, if three students received the second highest score on the AAHPER Test in their class, all three would receive a class rank of two. The following student with the next highest AAHPER score would rank fifth in the class.

Various combinations of the AAHPER Test were statistically analyzed by use of the single-classification. The method employed for both the boy and girl subjects was that of classification into three groups according to their score on the AAHPER Test. The girls were divided as follows: sixty to one hundred per cent was the top group (I); twenty to fifty-nine per cent was the middle group (II); and zero to nineteen per cent was the lower group (III). The boys were divided as follows: seventy to one hundred per cent was the top group (I); thirty to sixty-nine per cent was the middle group (II); and zero to twenty-nine per cent was the lower group (III).

The subjects were placed into three groups according to their scores on the AAHPER Test. The mean scores were established for each group and then the mean differences were found between each group. These scores were subjected to the t-test for finding the significance of the difference between the mean scores. Tables 3 and 4 illustrates the relationship between the groups according to the AAHPER Test.

#### THE SIGNIFICANT DIFFERENCES BETWEEN ALL SUBJECTS IN THEIR GROUPING TO THE FITNESS SCORES

Table 3 shows the analysis and comparison of all ninth grade subjects of upper to lower, upper to middle, and middle to lower classification by AAHPER.

Group I scored a mean of 72.8, Group II scored a mean of 41.7, and Group III scored a mean of 17.1.

When the upper group was compared to the lower group, the mean difference was 55.7 and a t-value of 38.18, which resulted in a

significant  $\underline{t}$  at the .01 level of confidence. To be significant at the .01 level of confidence, a  $\underline{t}$ -ratio of 2.66 was necessary.

When the upper and middle groups were compared in terms of fitness test the mean difference was 31.1 and a  $\underline{t}$ -value of 16.18, which resulted was significant at the .01 level of confidence. To be significant a  $\underline{t}$ -value of 2.576 was necessary.

The mean difference between the middle and lower groups was 24.6, and a  $\underline{t}$ -ratio of 14.26 resulted and was significant at the .01 level of confidence. To be significant, a  $\underline{t}$ -value of 2.576 was necessary.

The same analysis was made for the tenth and eleventh grade males and females as found in Table 4.

Group I had a mean score of 70.8, Group II a mean score of 41.5, and Group III a mean score of 17.1. The mean difference between Groups I and III was 53.7 and a  $\underline{t}$  of 38.32 resulted, which was significant at the .01 level of confidence, a  $\underline{t}$  of 2.66 was necessary.

When Groups I and II were compared, the mean difference was 29.3, and a  $\underline{t}$ -value of 13.75, which resulted, was significant at the .01 level of confidence, a  $\underline{t}$ -ratio of 2.576 was necessary.

The mean difference between Group II and III was 24.4, and a  $\underline{t}$  of 13.5 resulted, which was significant at the .01 level of confidence. To be significant at the .01 level of confidence, a  $\underline{t}$  of 2.576 was necessary.

Table 3

Analysis and Comparison of All Ninth Grade Subjects of  
Upper to Lower, Upper to Middle, and  
Middle to Lower Classification by  
American Association of Health,  
Physical Education and  
Recreation Test

Group*	Number	Mean Score	Mean Difference	<u>t</u>	P
I III	42 58	72.8 17.1	55.7	38.18	.01
I II	42 212	72.8 41.7	31.1	16.18	.01
II III	212 58	41.7 17.1	24.6	14.26	.01

\* I--Upper; II--Middle; III--Lower

t needed with 98 df at .05 = 2.000  
t needed with 98 df at .01 = 2.660  
t needed with 252 df at .05 = 1.960  
t needed with 252 df at .01 = 2.576  
t needed with 268 df at .05 = 1.960  
t needed with 268 df at .01 = 2.576

Table 4

Analysis and Comparison of All Tenth and Eleventh Grade  
Subjects of Upper to Lower, Upper to Middle,  
and Middle to Lower Classification by  
American Association of Health,  
Physical Education and  
Recreation Test

Group*	Number	Mean Score	Mean Difference	<u>t</u>	P
I III	36 50	70.8 17.1	53.7	38.32	.01
I II	36 290	70.8 41.5	29.3	13.75	.01
II III	290 50	41.5 17.1	24.4	13.50	.01

\* I--Upper; II--Middle; III--Lower

t needed with 84 df at .05 = 2.000

t needed with 84 df at .01 = 2.660

t needed with 324 df at .05 = 1.960

t needed with 324 df at .01 = 2.576

t needed with 338 df at .05 = 1.960

t needed with 338 df at .01 = 2.576



THE SIGNIFICANT DIFFERENCES BETWEEN ALL SUBJECTS IN THEIR  
GROUPING TO THE SOCIAL ACCEPTANCES SCORES

Social acceptability was measured for each student by adding the points they received on the sociometric test. Being chosen first on the sociometric test earned the student three points, chosen second earned the student two points, and being chosen third earned the student one point. It must be noted that the students were limited in their social choosing by the students available to them in their particular physical education class, and not to any three students in the school.

Table 5 shows the analysis and comparison of all ninth grade subjects of upper to lower, upper to middle, and middle to lower classification by social acceptance scores.

The mean scores on the social acceptance test were found for each fitness group: upper, middle, and lower.

The upper group had a mean score of 7.88 on the Social Acceptance Test. The middle group had a mean score of 5.19 and the lower group had a mean score of 4.27. The mean difference between groups of upper and lower was 3.61, which resulted in a  $t$  of 4.95, which was significant at the .01 level of confidence. To be significant at the .01 level, a  $t$  of 2.660 was necessary.

When the upper group was compared to the middle group, the mean difference was 2.69 and the  $t$  of 3.75, which resulted and was significant at the .01 level of confidence, a  $t$  of 2.61 was necessary.

The mean difference between groups II and III was .92 with a  $t$  of 1.52. To be significant at the .01 level, a  $t$  of 2.576 was necessary and to be significant at the .05 level of confidence, a  $t$  of 1.960 was

necessary. Therefore, there was no significant difference between groups II and III in social acceptability.

The text analysis was made for the tenth and eleventh grade males and females according to their social acceptance, as found in Table 6.

The upper group or group I had a mean score of 6.27, and the middle group had a mean score of 5.63, and the lower group had a mean score of 4.58. The mean difference between the upper and middle group was 1.69, which resulted in a  $t$  of 2.4, which was not significant at the .01 level of confidence. To be significant at the .01 level, a  $t$  of 2.660 was necessary. However, there was a significant at the .05 level of confidence. A  $t$  of 2.00 was necessary to be significant at the .05 level.

When the upper and middle groups were compared, the mean difference was .64 with a  $t$  of .78. This was not significant at the .01 level or the .05 level.

The mean difference between groups II and III was 1.05 with a  $t$  of 1.48. This was not significant at either level, the .01 or .05 level.

#### THE SIGNIFICANT DIFFERENCES OF MALE AND FEMALE SUBJECTS IN COMPARISON TO THEIR FITNESS SCORES

Table 7 shows the analysis and comparison of male tenth and eleventh grade subjects of upper to lower, upper to middle, and middle to lower classification by the AAHPER Test.

Group I scored a mean of 76.56, Group II a mean of 46.63, and Group III a mean of 19.49.

Table 5

Analysis and Comparison of All Ninth Grade Subjects of  
Upper to Lower, Upper to Middle, and Middle to Lower  
Classification by Social Acceptance Scores

Group*	Number	Mean Score	Mean Difference	<u>t</u>	P
I III	42 58	7.88 4.27	3.61	4.95	.01
I II	42 212	7.88 5.19	2.69	3.75	.01
II III	212 58	5.19 4.27	.92	1.52	--

\* I--Upper; II--Middle; III--Lower

t needed with 98 df at .05 level = 2.000  
t needed with 98 df at .01 level = 2.660  
t needed with 252 df at .05 level = 1.960  
t needed with 252 df at .01 level = 2.576  
t needed with 268 df at .05 level = 1.960  
t needed with 268 df at .01 level = 2.576

Table 6

Analysis and Comparison of All Tenth and Eleventh Grade  
Subjects of Upper to Lower, Upper to Middle,  
and Middle to Lower Classification by  
Social Acceptance Scores

Group*	Number	Mean Score	Mean Difference	<u>t</u>	P
I III	36 50	6.27 4.58	1.69	2.40	.05
I II	36 290	6.27 5.63	.64	.78	--
II III	290 50	5.63 4.58	1.05	1.48	--

\* I--Upper; II--Middle; III--Lower

t needed with 84 df at .05 level = 2.000  
t needed with 84 df at .01 level = 2.660  
t needed with 324 df at .05 level = 1.960  
t needed with 324 df at .01 level = 2.576  
t needed with 338 df at .05 level = 1.960  
t needed with 338 df at .01 level = 2.576

When the top group was compared to the lower group the mean difference was 57.07 with a t-value of 30.71, which was significant at the .01 level of confidence. To be significant at the .01 level of confidence, a t-ratio of 2.704 was necessary.

The mean difference between the top and the middle groups were 29.93 with a t of 12.69, which proved to be significant at the .01 level of confidence. A t-ratio of 2.66 was necessary to be significant at the .01 level of confidence.

A mean difference of 27.14 and a t-value of 12.13 resulted when the middle group was compared to the lower group. A t-ratio of 2.66 was necessary to be significant at the .01 level. Therefore, there was a significant difference between the two groups.

Table 8 compared the female tenth and eleventh grade subjects of upper to lower, upper to middle, and middle to lower classification by the AAHPER Test.

Group I scored a mean of 67.46, Group II a mean of 38.35, and Group III a mean of 14.64.

The mean difference between the upper and the lower groups was 52.82 and a t-value of 29.84, which resulted and was significant at the .01 level of confidence when a t-ratio of 2.704 was necessary.

When the upper group was compared to the middle group, the mean difference was 29.11 which resulted in a t of 10.48. This proved to be significant at the .01 level of confidence when a t of 2.576 was necessary.

A mean difference of 23.71 and a t-value of 11.35 resulted when the middle group was compared to the lower group. Therefore, there was a significant difference between the two groups at the .01 ratio.

Table 7

Analysis and Comparison of Male Tenth and Eleventh Grade  
Subjects of Upper to Lower, Upper to Middle,  
and Middle to Lower Classification by  
American Association of Health,  
Physical Education and  
Recreation Test

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I III	25 30	53.96 76.11	76.56 19.49	57.07	30.71	.01
I II	25 86	53.96 114.00	76.56 46.63	29.93	12.69	.01
II III	86 30	114.00 76.11	46.63 19.49	27.14	12.13	.01

\* I--Upper; II--Middle; III--Lower

t needed with 53 df at .05 level = 2.021  
t needed with 53 df at .01 level = 2.704  
t needed with 109 df at .05 level = 2.000  
t needed with 109 df at .01 level = 2.660  
t needed with 114 df at .05 level = 2.000  
t needed with 114 df at .01 level = 2.660

Table 8

Analysis and Comparison of Female Tenth and Eleventh Grade  
Subjects of Upper to Lower, Upper to Middle,  
and Middle to Lower Classification by  
American Association of Health,  
Physical Education and  
Recreation Test

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I	17	75.93	67.46			
III	28	39.85	14.64	52.82	29.84	.01
I	17	75.93	67.46			
II	126	109.02	38.35	29.11	10.48	.01
II	126	109.02	38.35			
III	28	39.85	14.64	23.71	11.35	.01

\* I--Upper; II--Middle; III--Lower

t needed with 43 df at .05 level = 2.021  
t needed with 43 df at .01 level = 2.704  
t needed with 141 df at .05 level = 1.960  
t needed with 141 df at .01 level = 2.576  
t needed with 152 df at .05 level = 1.960  
t needed with 152 df at .01 level = 2.576

The same analysis and comparison was made for the ninth grade male fitness groups and then for the ninth grade female fitness groups, as shown in Tables 9 and 10, respectively.

The mean score for the upper group of ninth grade males was 74.31, the middle group was 49.84, and the lower group was 21.29.

The mean difference between the upper and the lower group was 53.02, which resulted in a  $t$ -ratio of 33.55. This was highly significant at the .01 level of confidence which 2.750 was necessary.

When the upper and the middle, and the middle and the lower were compared, a mean difference of 24.47 and a  $t$ -value of 9.47 was obtained for the first comparison, and a mean difference of 28.55 and a  $t$  of 11.79 was obtained for the second. Both comparisons were significant at the .01 level of confidence when 2.576 was necessary.

The mean scores for the upper group of ninth grade females was 67.02, the middle groups was 36.09, and the lower group was 14.02.

The mean difference between the upper and the lower group was 53.00, which resulted in a  $t$ -ratio of 30.42. This was highly significant at the .01 level of confidence when 2.704 was necessary.

When the upper and the middle, and the middle and the lower were compared, a mean difference of 30.93 and a  $t$  of 12.37 was obtained for the first comparison, and a mean difference of 22.07 and a  $t$  of 11.46 was obtained for the second. Both comparisons were significant at the .01 level of confidence when 2.576 was necessary.



Table 9

Analysis and Comparison of Male Ninth Grade Subjects  
of Upper to Lower, Upper to Middle, and  
Middle to Lower Classification by  
American Association of Health,  
Physical Education and  
Recreation Test

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I III	19 22	36.18 57.81	74.31 21.29	53.02	33.55	.01
I II	19 115	36.18 109.65	74.31 49.84	24.47	9.47	.01
II III	115 22	109.65 57.81	49.84 21.29	28.55	11.79	.01

\* I--Upper; II--Middle; III--Lower

t needed with 39 df at .05 level = 2.042  
t needed with 39 df at .01 level = 2.750  
t needed with 132 df at .05 level = 1.960  
t needed with 132 df at .01 level = 2.576  
t needed with 135 df at .05 level = 1.960  
t needed with 135 df at .01 level = 2.576

Table 10

Analysis and Comparison of Female Ninth Grade Subjects  
of Upper to Lower, Upper to Middle, and  
Middle to Lower Classification by  
American Association of Health,  
Physical Education and  
Recreation Test

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I	17	70.98	67.02			
III	28	43.03	14.02	53.00	30.42	.01
I	17	70.98	67.02			
II	175	100.79	36.09	30.93	12.37	.01
II	175	100.79	36.09			
III	28	43.03	14.02	22.07	11.46	.01

\* I--Upper; II--Middle; III--Lower

t needed with 43 df at .05 level = 2.021

t needed with 43 df at .01 level = 2.704

t needed with 190 df at .05 level = 1.960

t needed with 190 df at .01 level = 2.576

t needed with 201 df at .05 level = 1.960

t needed with 201 df at .01 level = 2.576

THE SIGNIFICANT DIFFERENCES OF MALE AND FEMALE SUBJECTS  
IN COMPARISON TO THEIR SOCIAL ACCEPTANCE SCORES

Table 11 shows the analysis and comparison of male tenth and eleventh grade fitness groups in social acceptance. The upper fitness group had a mean score of 8.96, the middle group a mean score of 5.52, and the lower group a mean score of 4.50. The mean difference between the upper and lower fitness groups was 4.46. This resulted in a t-value of 4.31, which is significant at the .01 level of confidence. When the upper group was compared to the middle group, a mean difference of 3.44 was obtained. This resulted in a t-value of 3.16, which also shows a significant difference between the groups. However, when the middle and the lower groups were compared, a mean difference of 1.02 was obtained. This was not significant in that a t of 1.04 was not enough since a t-ratio of 2.000 was necessary at the .05 level.

The social acceptability scores of the three fitness groups of tenth and eleventh grade females was then compared. According to Table 12, the upper fitness group had a mean score of 6.29, the middle fitness group 4.97, and the lower fitness group 4.04.

The mean difference between the upper and the lower fitness group was 2.25, which didn't result in a t-level .01, but was significant at the .05 level since a t-ratio 2.021 was necessary to be significant at that level.

When the upper and the middle fitness groups were compared, there was a mean difference of 1.32 on the social acceptability scores. This was not significant at the .01 level of confidence or the .05 level of confidence.

Table 11

Analysis and Comparison of Male Tenth and Eleventh Grade  
Subjects of Upper to Lower, Upper to Middle,  
and Middle to Lower Classification by  
Social Acceptance Scores

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I III	25 30	4.09 3.43	8.96 4.50	4.46	4.31	.01
I II	25 86	4.09 4.91	8.96 5.52	3.44	3.16	.01
II III	86 30	4.91 3.43	5.52 4.50	1.02	1.04	--

\* I--Upper; II--Middle; III--Lower

t needed with 53 df at .05 level = 2.021  
t needed with 53 df at .01 level = 2.704  
t needed with 109 df at .05 level = 2.000  
t needed with 109 df at .01 level = 2.660  
t needed with 114 df at .05 level = 2.000  
t needed with 114 df at .01 level = 2.660

There was also no significant difference in social acceptability scores between the middle and the lower fitness groups. The mean difference between the two groups was only .93, which resulted in a t-ratio of 1.23.

Table 13 gives the results of the analysis and comparison of the ninth grade male fitness groups in their social acceptability. The upper fitness group had a mean score of 5.53 in social acceptability, the middle group a mean score of 5.94, and the lower group a mean score of 6.73. It is interesting to note here that this is the first case that the lower fitness group had surpassed the upper and middle group in social acceptability.

The mean difference between the upper and the lower fitness groups was -1.20, which resulted in a t-value of .721, though the lower group received a higher mean score than the upper group, the difference was not significant at either the .05 or the .01 level of confidence. When the upper group was compared with the middle group, the mean difference was -.41, which had a t-value of .316. There was no significant difference between the two groups on either the .05 or the .01 level.

There was also found no significant difference between the middle and the lower fitness groups in social acceptability, even though the lower group scored higher. The mean difference resulted in a score of -.79 which had a t-value of .636.

More of a significant difference was found between the ninth grade female fitness groups in social acceptability as shown in Table 14. This was not true with the ninth grade males. The upper fitness group had a mean score of 7.12 in social acceptance, the middle fitness

Table 12

Analysis and Comparison of Female Tenth and Eleventh Grade  
Subjects of Upper to Lower, Upper to Middle,  
and Middle to Lower Classification by  
Social Acceptance Scores

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I III	17 28	3.23 2.92	6.29 4.04	2.25	2.36	.05
I II	17 126	3.23 3.72	6.29 4.97	1.32	1.39	--
II III	126 28	3.72 2.92	4.97 4.04	.93	1.23	--

\* I--Upper; II--Middle; III--Lower

t needed with 43 df at .05 level = 2.021  
t needed with 43 df at .01 level = 2.704  
t needed with 141 df at .05 level = 1.960  
t needed with 141 df at .01 level = 2.576  
t needed with 152 df at .05 level = 1.960  
t needed with 152 df at .01 level = 2.576

Table 13

Analysis and Comparison of Male Ninth Grade Subjects  
of Upper to Lower, Upper to Middle, and  
Middle to Lower Classification by  
Social Acceptance Scores

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I III	19 22	5.00 5.33	5.53 6.73	-1.20	.721	--
I II	19 115	5.00 5.28	5.53 5.94	- .41	.316	--
II III	115 22	5.28 5.33	5.94 6.73	- .79	.636	--

\* I--Upper; II--Middle; III--Lower

t needed with 39 df at .05 level = 2.042

t needed with 39 df at .01 level = 2.750

t needed with 132 df at .05 level = 1.960

t needed with 132 df at .01 level = 2.576

t needed with 135 df at .05 level = 1.960

t needed with 135 df at .01 level = 2.576

group a mean score of 5.43, and the lower fitness group a mean score of 2.89.

The mean difference between the upper and the lower fitness group in social acceptability was 4.23, which resulted in a t-value of 3.84. This proved to be significant at the .01 level of confidence.

When the upper fitness group was compared to the middle fitness group there was a mean difference of 1.69 and the t-value was 1.59. This difference was not significant at either the .05 level or the .01 level of confidence.

There was, however, a significant difference between the middle and lower fitness group in social acceptability. The mean difference was 2.54, with a t-value of 3.11, which was significant at the .01 level of confidence.

#### DISCUSSION OF FINDINGS

The assigned fitness groups proved to be significantly different in scores as shown in Tables 3 and 4. This shows there to be an accurate division of groups according to fitness. It is interesting to note that the mean score of the upper ninth grade students differed only two points from the mean score of the upper tenth and eleventh grade students in the AAHPER Test. The means for the other two groups were the same.

Tables 5 and 6 illustrate that there was a significant difference between ninth grade fitness groups I and III, and between I and II in the social acceptance. However, there was no significant difference between ninth grade fitness groups II and III in social acceptance.



Table 14

Analysis and Comparison of Female Ninth Grade Subjects  
of Upper to Lower, Upper to Middle, and  
Middle to Lower Classification by  
Social Acceptance Scores

Group*	Number	Standard Deviation	Mean Score	Mean Difference	<u>t</u>	P
I III	17 28	4.30 2.91	7.12 2.89	4.23	3.84	.01
I II	17 175	4.30 4.14	7.12 5.43	1.69	1.59	--
II III	175 28	4.14 2.91	5.43 2.89	2.54	3.11	.01

\* I--Upper; II--Middle; III--Lower

t needed with 43 df at .05 level = 2.021  
t needed with 43 df at .01 level = 2.704  
t needed with 190 df at .05 level = 1.960  
t needed with 190 df at .01 level = 2.576  
t needed with 201 df at .05 level = 1.960  
t needed with 201 df at .01 level = 2.576

There was not as much of a difference between tenth and eleventh grade fitness groups in social acceptance as was with ninth grade groups. This may be accounted for the fact they may be more acquainted with each other and are thus more likely to choose their friends rather than on other basis such as athletic ability.

According to Tables 7 and 9, the mean scores of tenth and eleventh grade males can be compared with the mean scores of ninth grade males. The mean score of the upper tenth and eleventh grade males was two points higher than the mean score of the upper ninth grade males. However, for the middle and the lower group of ninth grade males the mean scores were higher by three points and two points respectively than the mean scores for the middle and lower group of male tenth and eleventh grade subjects. This shows that although the top tenth and eleventh grade males had a higher level of fitness than the top ninth grade males, the ninth grade males received a higher level than tenth and eleventh grade males in the middle and lower levels of fitness.

When comparing the female groups according to Tables 8 and 10, it can be noted that the upper fitness groups of ninth and tenth and eleventh grade females received the same scores. The same was true with the lower groups. But in the middle fitness group, the female tenth and eleventh grade subjects received a mean score that was two points higher than the new score of the ninth grade females.

The females appear to be more consistent in their groupings according to physical fitness.

Tables 11 and 13 illustrate that tenth and eleventh grade males in the upper fitness group were more likely to gain social acceptance because of their ability than ninth grade males. The upper fitness

group of the male tenth and eleventh grade subjects received a mean score on social acceptability that was over three points above that of the male ninth grade subjects. It may be noted that the upper tenth and eleventh grade males also received a higher fitness mean score than the ninth grade males. Thus, it seems that the higher the skill level, the higher the social acceptability.

Tables 12 and 14 illustrate that the ninth grade females in the upper fitness group were more likely to be more socially accepted than the tenth and eleventh grade females.

The upper group of ninth grade females received a mean score on social acceptability that was one point higher than the mean score for the upper group of tenth and eleventh grade females. It may be noted that while the ninth grade females scored higher on both fitness and acceptability than tenth and eleventh grade females, the tenth and eleventh grade males scored higher on these two factors.

It was interesting to note that the ninth grade males in Table 13, which had the lower fitness group had surpassed the upper and middle groups in the social acceptability mean score.

## Chapter 5

### SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

#### SUMMARY

The purpose of this study was to investigate the relationship, if any, between physical fitness and social acceptance of ninth, tenth, and eleventh grade students. The comparison was made to test the hypotheses that there is no significant difference between individuals who score highest on a modified version of the American Association for Health, Physical Education, and Recreation Fitness Test and social acceptance.

The AAHPER Test and Moreno's Near Sociometric Test was given to all ninth, tenth, and eleventh grade physical education students at Thomas W. Harvey High School in Painesville, Ohio, in the 1969-1970 school year.

#### FINDINGS

A summary of the findings are as follows:

1. The male subjects had a higher fitness degree in their three groupings than the females. The mean difference between top male and female groups was 8.20; the mean difference between the middle male and female groups was 11.02; and the mean difference between the lower male and female groups was 6.06.

2. The male subjects had a higher mean average of 5.96 on their social acceptability than did females with a mean average of 5.09.

3. In all fitness scores, there was a significant difference at the .01 level; when a comparison was made between the three groups.

4. In all cases except ninth grade males, the upper fitness groups scored higher in social acceptance than the middle fitness groups, and the middle groups scored higher than the lower fitness groups.

For males tenth and eleventh grade subjects, the mean score in social acceptability for fitness groups I, II, and III, was 8.96, 5.52, and 4.50 respectively. There was a significant difference at the .01 level between groups I and III, and I and II, however, there was no significant difference between II and III in social acceptability.

For female tenth and eleventh grade subjects, the mean score in social acceptability for fitness groups I, II, and III, was 6.29, 4.97, and 4.04 respectively. However, there was no significant difference at the .01 level between all the groups.

For ninth grade female subjects, the mean score in social acceptance for fitness groups I, II, and III, was 7.12, 5.43, and 2.89 respectively. There was no significant difference at either the .01 or .05 level between groups I and II. However, there was a significant difference at the .01 level between groups II and III.

5. Only the ninth grade males in the lowest fitness group, which had a mean score of 6.73, scored higher on social acceptability than the upper two groups, which had a mean score of 5.94 for the middle group and 5.53 for the upper group. Likewise, the middle fitness group

scored higher in social acceptance than the upper fitness group, since the mean difference was  $-.41$ .

6. In nine groupings, there was no significant difference between fitness groups in social acceptability at either the  $.01$  or  $.05$  level.

7. In six groupings, there was a significant difference between fitness groups in social acceptability to the  $.01$  level of confidence.

8. In three groupings, there was a significant difference between fitness groups in social acceptability to the  $.05$  level of confidence.

#### CONCLUSIONS

From the data collected from the study, the following conclusions may be drawn:

1. The relationship between fitness and social acceptances was greater for ninth grade subjects than that of tenth and eleventh graders.

2. There is more of a relationship between fitness and social acceptance for tenth and eleventh grade males than for tenth and eleventh grade females.

3. There is more of a relationship between fitness and social acceptance for ninth grade females than ninth grade males.

4. There is more of a relationship between fitness and social acceptance among tenth and eleventh grade males than ninth grade males.

5. There is more of a relationship between fitness and social acceptance of ninth grade females than for tenth and eleventh grade females.

6. Females tend to have more choices outside their fitness level than males. In other words, males may be more likely to choose friends because of physical ability than females.

7. A greater degree of fitness usually enables one to have a higher degree of social acceptance. Fitness alone does not mean that a person will have social acceptance among his peers. Yet it does help in the total makeup of the individual.

### RECOMMENDATIONS

As a result of this study, the following recommendations are made for further study:

1. A need for a follow-up study to investigate the acceptability of all the ninth, tenth, and eleventh grade subjects at Thomas W. Harvey High School in Painesville, Ohio, as they progress to higher grade levels.

2. The public in this day and age should be informed of the importance of the total individual's physical and social acceptability by way of physical educators.

3. Emphasis should be placed in all areas of physical pursuits: athletics, intramurals, and physical education classes. This may be the key which will help in social acceptance among peer groups.

4. A course should be taught on the high school level which deals with human and social relation problems.

5. An instrument such as the interpersonal pyramid of bridging groups should be a study of the future. The pyramid is broken down into two or more group heads, which are chosen within the peer group. Thus, they choose three individuals whom they would prefer to have in their

group. Likewise, the three individuals who were chosen will in return pick three individuals with whom they want to work with. This chain continues until every individual in the group is in a pyramid. Thus, it is everyone's job to reach the top of the pyramid with the help of others within the groups. It could be stated, in other words, that the ladder of interpersonal success lays within the reach of everyone. One step at a time is a sure way to reach the height of success in a society of mankind.

6. A study devised to investigate how many schools across the country would use a social acceptability questionnaire for their students would seem warranted as a result of this study.



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## APPENDICES

APPENDIX A

AAHPER Exam Fitness Sheet

NAME (PLEASE PRINT)	WEIGHT	AGE		TOTAL CLASS RANK	MAT. RANK	DATE January 1970	PER.	GRADE
		yr.	nth.					
Pull-ups								
Sit-ups								
Shuttle Run								
Standing Broad Jump								
50-yard Dash								
600-yard Run-Walk								

APPENDIX B

Sociometric Questionnaire Form

Which three people would you most prefer to work with in this class?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Name \_\_\_\_\_ Age \_\_\_\_\_ Month \_\_\_\_\_