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THE RELATIONSHIP BETWEEN INTELLIGENCE,
PHYSICAL FITNESS, AND SOCIAL STATUS
IN A SIXTH GRADE CLASS

by

Horace S. Coco

A problem presented in partial fulfillment
of the requirements for the
Master of Education Degree
School of Education
University of Massachusetts
1967

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TABLE OF CONTENTS

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TABLE OF CONTENTS

| | Page |
|--|------|
| TABLE OF CONTENTS | iii |
| LIST OF TABLES | v |
| LIST OF FIGURES | vi |
| CHAPTER | |
| I. INTRODUCTION AND DEFINITION OF IMPORTANT TERMS. | 1 |
| INTRODUCTION | 1 |
| Statement of Purpose | 1 |
| Significance of Problem | 1 |
| Assumptions and Limitations | 2 |
| DEFINITION OF IMPORTANT TERMS | 2 |
| Motor Fitness | 2 |
| Youth Fitness Test | 3 |
| II. RELATED LITERATURE | 4 |
| The California Test of Mental Maturity | 4 |
| Sociometric Test | 6 |
| Physical Fitness Test | 9 |
| III. METHODS AND PROCEDURES | 12 |
| Subjects | 12 |
| Intelligence Test | 12 |
| Physical Fitness Test | 12 |
| Pull-ups for Boys | 13 |
| Modified Pull-ups for Girls | 13 |
| Sit-ups | 13 |
| Shuttle Run | 15 |

| CHAPTER | Page |
|---|------|
| 50-yd. Dash | 15 |
| Softball Throw | 17 |
| Standing Broad Jump | 17 |
| 600-yd. Run-walk | 17 |
| Social Acceptance | 20 |
| IV. PRESENTATION AND ANALYSIS OF DATA | 23 |
| I. Q. Test | 23 |
| Physical Fitness Test | 23 |
| Sociometric Test | 24 |
| Spearman Rank Order | 24 |
| V. SUMMARY AND CONCLUSIONS | 29 |
| Summary | 29 |
| Conclusions | 31 |
| BIBLIOGRAPHY | 34 |

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LIST OF TABLES

LIST OF TABLES

| TABLE | Page |
|--|------|
| I. Classroom A -- Listing of Ranks for Each of Three Tests Administered | 26 |
| II. Classroom B -- Listing of Ranks for Each of Three Tests Administered | 27 |
| III. Rank Order Correlations for: Social Acceptance - Physical Fitness; Social Acceptance - Intelligence; Intelligence - Physical Fitness | 28 |

1950

LIST OF FIGURES

FIGURE 1
FIGURE 2
FIGURE 3
FIGURE 4
FIGURE 5
FIGURE 6
FIGURE 7
FIGURE 8
FIGURE 9
FIGURE 10
FIGURE 11
FIGURE 12
FIGURE 13
FIGURE 14
FIGURE 15
FIGURE 16
FIGURE 17
FIGURE 18
FIGURE 19
FIGURE 20
FIGURE 21
FIGURE 22
FIGURE 23
FIGURE 24
FIGURE 25
FIGURE 26
FIGURE 27
FIGURE 28
FIGURE 29
FIGURE 30
FIGURE 31
FIGURE 32
FIGURE 33
FIGURE 34
FIGURE 35
FIGURE 36
FIGURE 37
FIGURE 38
FIGURE 39
FIGURE 40
FIGURE 41
FIGURE 42
FIGURE 43
FIGURE 44
FIGURE 45
FIGURE 46
FIGURE 47
FIGURE 48
FIGURE 49
FIGURE 50
FIGURE 51
FIGURE 52
FIGURE 53
FIGURE 54
FIGURE 55
FIGURE 56
FIGURE 57
FIGURE 58
FIGURE 59
FIGURE 60
FIGURE 61
FIGURE 62
FIGURE 63
FIGURE 64
FIGURE 65
FIGURE 66
FIGURE 67
FIGURE 68
FIGURE 69
FIGURE 70
FIGURE 71
FIGURE 72
FIGURE 73
FIGURE 74
FIGURE 75
FIGURE 76
FIGURE 77
FIGURE 78
FIGURE 79
FIGURE 80
FIGURE 81
FIGURE 82
FIGURE 83
FIGURE 84
FIGURE 85
FIGURE 86
FIGURE 87
FIGURE 88
FIGURE 89
FIGURE 90
FIGURE 91
FIGURE 92
FIGURE 93
FIGURE 94
FIGURE 95
FIGURE 96
FIGURE 97
FIGURE 98
FIGURE 99
FIGURE 100

LIST OF FIGURES

| FIGURE | Page |
|--|------|
| 1. Pull-ups for Boys | 14 |
| 2. Modified Pull-ups for Girls | 14 |
| 3. Starting Position for Sit-up | 16 |
| 4. Sit-up | 16 |
| 5. Shuttle Run | 16 |
| 6. 50-yd. Dash | 18 |
| 7. Softball Throw | 18 |
| 8. Standing Broad Jump | 19 |
| 9. Girls Field-Hockey Field Used for 600-yd. Run-walk | 19 |
| 10. Sample of Sociometric Test Answer Sheet | 21 |
| 11. Sample Copy of Tabulation Form Used in Sociometric Test | 25 |

INTRODUCTION AND DEFINITION OF IMPORTANT TERMS

CHAPTER I

INTRODUCTION AND DEFINITION OF IMPORTANT TERMS

CHAPTER I

INTRODUCTION

Statement of Purpose. What is the reasoning behind an elementary-school-level child's choice of friends? Why does he like one classmate better than another? What qualities motivate a child to seek a particular classmate's friendship? Is it intelligence; or perhaps athletic ability; or even a combination of both?

Using the following three questions as a guide:

(1) Is there a relationship between intelligence and physical fitness?; (2) Does the child's social acceptability have any relationship to intelligence?; and (3) What relationship, if any, exists between physical fitness and social acceptability?; it will be attempted to determine if these relationships do exist and in what way, if any, they contribute to a child's acceptance by his peers.

Significance of Problem. A child's emotional and social development is probably as important as his intellectual development. This seems to become more apparent as the years progress and the child develops into an adult. Intellectual ability is an important part of an individual's life, but the ability to make friends and develop social contacts is also an important facet of life. With the information gained through this study, i.e. any existing relationships between intelligence, physical fitness, and

social status, a teacher will be better equipped to help her students gain social acceptance. For example, a child with a low or just below average IQ, but with physical ability, could be encouraged to participate more in physical activities and thereby perhaps improve his social status in the class. Also, it is important for a teacher to know the classroom leaders. If a relationship is found between the criteria, and if the teacher knows the intelligence and athletic inclinations of her pupils, she will be better able to determine these leaders. Once the leaders have been found, the teacher can utilize them in her teaching; thereby becoming more efficient and effective.

Assumptions and Limitations. Each of the three tests were conducted on the assumption that each child was trying to perform to the best of his ability. Since the I.Q. tests were administered by competent testers and not the investigator, it is assumed that the scores are reliable and may be used with confidence. Because only two sixth grade classes of 23 and 24 pupils were used as subjects, the scope of the study is limited. The investigator was limited also with respect to the amount of time available to test the students; therefore, in some instances the physical fitness test was not performed under ideal weather conditions.

DEFINITION OF IMPORTANT TERMS

Motor Fitness. Wellgoose describes motor fitness as

a qualitative performance involving the physical fitness elements of heart-lung efficiency, muscular strength, and muscular endurance in combination with power, speed, agility, flexibility, and balance.¹

Youth Fitness Test. A seven item physical fitness test devised by the American Association of Health, Physical Education, and Recreation.

¹C. E. Wellgoose, Evaluation in Health Education and Physical Education (New York: McGraw-Hill Book Co., Inc., 1961), p. 160.

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CHAPTER II

RELATED LITERATURE

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CHAPTER II

RELATED LITERATURE

The California Test of Mental Maturity. In order to measure the intelligence of the children, the California Test of Mental Maturity, 1957 edition, was used. The test is published in two forms: the "short form" which can be administered in the typical school period; and the "long form" which requires about two hours for completion. Results are given in terms of language, non-language, and total mental ages and I.Q.'s. The language score is based on four subscores, while the non-language score is based on seven or eight subscores. In a review of the California Test of Mental Maturity, Melholland reports that, "...for the total score, the single grade reliabilities for grades 1, 2, 5, 8, 12 and college freshmen are all above .90."¹; and that, "We are probably safe in saying that the language, non-language, and total scores are sufficiently reliable for describing individual pupils; the subscores generally are not."²

In the report, Melholland also states that the CTMM was designed to correlate with the Stanford-Binet. This

¹J. E. Melholland, "The California Test of Mental Maturity," The Fifth Mental Measurement Yearbook, Oscar Buros, editor (New Jersey: The Gryphon Press, 1959), p. 438.

²Ibid.

is one of the test's chief claims for validity, according to Melholland. "One study is cited in which this correlation is .88, and the claim is made that several other studies have yielded even higher values."³

Melholland's general feelings toward the CTMM are expressed at the conclusion of his review. "To summarize, the test is an excellent and usable test of general intelligence and has real value for comparing an individual's verbal and non-verbal abilities."⁴

F. S. Freeman is not quite as kind when he talks about the CTMM in his review. He says that, "On the whole, these 1957 scales provide fuller and more significant standardization and evaluative data than did their predecessors; hence, they are more valuable than the earlier editions. But more data on them are needed to demonstrate the extent to which they are valid in educational selection, prediction, and guidance at each of the several age and grade levels."⁵ Freeman goes on to say that more data is needed in regard to validity and reliability of the test when used with groups of individuals at each of the several levels of ability (slow, average, etc.).

³Ibid., p. 439.

⁴Ibid.

⁵F. S. Freeman, "The California Test of Mental Maturity," The Fifth Mental Measurement Yearbook, Oscar Buros, editor (New Jersey: The Gryphon Press, 1959), p. 437.

Generally, both Freeman and Melholland seem to think that the CTMM test can be improved, but that it is an adequate test.

Sociometric Test. One of the problems that was encountered while setting up this study was how to test social status. The answer was sociometry. Sociometry is defined by Moreno, who is generally regarded as the founder of the sociometric branch of study, as, "...the mathematical study of psychological properties of populations; the experimental technique of, and the results obtained by, application of quantitative and qualitative methods."⁶ A more simplified definition would be "...the study of those aspects of the social-emotional climate in the classroom having to do with feelings of attraction, rejection, and indifference which pupils express toward each other when faced with situations calling for interaction within the classroom."⁷ In short, sociometric devices are useful to teachers and others who seek information about interpersonal relationships that are present among various class members, and provide information about the particular social status of each individual in the class.

In order to have valid results, the following six

⁶C. P. Froehlich and K. B. Hoyt, Guidance Testing (third edition; Chicago: Science Research Association, Inc., 1959), p. 372.

⁷Ibid.

conditions are necessary:⁸

1. The students in the class should be well acquainted with each other.
2. Positive teacher-pupil relationships should exist in the classroom.
3. Students should know that results will be used positively.
4. A relaxed, informal classroom atmosphere should prevail when the inventory is administered. (The word test should be omitted.)
5. Spontaneity distinguishes the sociometric inventory. (No prior announcement, no hurrying of students in making choices.)
6. The teacher gives the students clear and simple directions.

Two major factors influence the reliability of sociometric results: One is the nature of the criterion (sociometric question) used, and the other is the number of choices allotted.⁹ A study by N. E. Gronlund has shown that sociometric results are most reliable when general criteria, such as work companion and seating companion, are used.¹⁰

Eng and French have shown, with thirty-two sorority members, that five choices provided more reliable data than

⁸ Ibid., p. 381.

⁹ N. E. Gronlund and F. P. Barnes, "The Reliability of Social-Acceptability Scores Using Various Sociometric-Choice Limits," Elementary School Journal, LVII (1956), 153-7.

¹⁰ N. E. Gronlund, "Generality of Sociometric Status over Criteria in the Measurement of Social Acceptability," Elementary School Journal, LVI (December, 1955), 173-76.

three choices.¹¹ Similar results were obtained by Gronlund with pupils in eleven elementary-school classrooms.¹² In a study involving fourteen sections of a course entitled "Technique of Teaching in the Elementary School", Gronlund and Barnes found that best results were achieved by allotting the students at least four choices, when obtaining social-acceptability scores with the sociometric technique.¹³ Moreno found in his study that sixth grade boys and girls very rarely choose members of the opposite sex in the test.¹⁴

One of the earliest, if not the earliest, reported studies on the influence of intelligence on social acceptance is that by J. C. Almack in 1922.¹⁵ Constructing a simple sociometric device to determine the children's choice of companions, he correlated mutual friends' C.A.'s, I.Q.'s, and M.A.'s. He concluded that "...there is a tendency for an individual in choosing his associates to select

¹¹ E. Eng and R. L. French, "The Determination of Sociometric Status," Sociometry, XI (November, 1948), 368-71.

¹² N. E. Gronlund, "The Relative Stability of Classroom Social Status with Unweighted and Weighted Sociometric Status Scores," Journal of Educational Psychology, XLVI (October, 1955), 345-54.

¹³ Gronlund and Barnes, loc. cit.

¹⁴ J. L. Moreno, Who Shall Survive? Foundations of Sociometry, Group Psychotherapy and Sociodrama (New York: Beacon House, Inc., 1953), p. 130.

¹⁵ J. C. Almack, "The Influence of Intelligence on

from those of his own mental level.¹⁶ Others investigating relationships between intelligence and social acceptance are M. E. Bonney, E. A. Taylor, and W. B. Barbe. Their conclusions, in general, indicated a positive relationship between intelligence and social acceptance.¹⁷

Not all studies of social acceptance and intelligence agree with the investigators mentioned above. Moreno and P. H. Furfey report negative results in relating intelligence to social acceptance.¹⁸

Physical Fitness Test. There are many physical fitness tests available today, but the test that was chosen for this study is the American Association for Health, Physical Education, and Recreation Youth Fitness Test. In a study involving fifty senior high school boys, Julian U.

the Selection of Associates," School and Society, 16:529-530, 1922.

¹⁶ Ibid.

¹⁷ M. E. Bonney, "A Sociometric Study of the Relationships of Some Factors to Mutual Friendships on the Elementary, Secondary, and College Levels," Sociometry, 9:21-47, 1946; E. A. Taylor, "Some Factors Relating to Social Acceptance in Eighth-Grade Classrooms," Journal of Educational Psychology, 43:257-72, 1952; and W. B. Barbe, "Peer Relationships of Children of Different Intelligence Levels," School and Society, August 21, 1954, pp. 61-62.

¹⁸ J. L. Moreno, Who Shall Survive? A New Approach to the Problem of Human Inter-relations (Washington: Nervous and Mental Disease Publishing Co., 1934), pp. xvi, 91, and 440; and P. H. Furfey, "Some Factors Influencing the Selection of Boys' Chums," Journal of Applied Psychology, 11:47-51, 1927.

Stein found this seven item test to be highly reliable. He used the test-retest method of reliability and arrived at the following correlation coefficients: Pull-ups, .981; Broad jump, .900; Shuttle run, .832; Sit-ups, .958; 50-yd. Dash, .924; Softball throw, .931; and 600-yd. Run-Walk, .740. All these scores were significant beyond the .001 level.¹⁹ Although the correlation coefficient for the 600-yd. Run-Walk is the lowest of the seven, it is still high enough to be considered reliable. Wellgoose did a study on the reliability of the 600-yd. run-walk and came up with a high degree of reliability: .92 for junior high school girls, and .92 for junior high school boys.²⁰

As to the validity of this test, a quote taken from a study done by Wayne L. Sengstock on the Physical Fitness of Mentally Retarded Boys states, " It (AAHPER Youth Fitness Test) is accepted as a valid measuring instrument by the most prominent leaders in the field, and it measures speed, strength, coordination, and endurance. These afore mentioned items are the essence of physical

¹⁹ J. U. Stein, "Reliability of the Youth Fitness Test", AAHPER Research Quarterly, 35:328-9, October, 1964.

²⁰ C. E. Wellgoose, M. R. Askew, and M. P. Askew, "Reliability of the 600-yard Run-walk Test at the Junior High School Level", AAHPER Research Quarterly, 32:264-66, May, 1961.

fitness."²¹ Sengstock found that the results of his study indicate, "...there is a relationship between intelligence and motor performance, but to what extent cannot be determined."²²

Since the AAHPER Youth Fitness Test is an easy test to give in a Physical Education class, is a reliable test, and has national norms available for scoring, the investigator feels that this test is the best available means of evaluation for this study.

¹⁶ ²¹ W. L. Sengstock, "Physical Fitness of Mentally Retarded Boys," AAHPER Research Quarterly, 37:113-20, March, 1966.

²² Ibid, p. 120.

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CHAPTER III

METHODS AND PROCEDURES

CHAPTER III

METHODS AND PROCEDURES

Subjects. Two sixth grade classes in the Boylston Elementary School were used as subjects. One class contained ²³ 25 (twenty-five) students, and the other ²⁶ 26 (twenty-six). In each class two people were eliminated from the study because they were new students and an I.Q. score was not available for them. Also, because they were new students, the sociometric test used on them would not be valid.

Intelligence Test. The intelligence test used to determine I. Q. was the California Test of Mental Maturity. It was administered to the children by the Guidance Department in the school system. These scores were made available to the investigator by the Principal of the school.

Physical Fitness Test. The test for motor fitness that was used is the AAHPER Youth Fitness Test. This consists of seven items which can be given to both boys and girls. The subjects were familiar with this test, having been tested with it the two previous years. Before each item was tested, the students were told to do the best they could, and to try as hard as they could. All of the test items were demonstrated except for the 50-yd.

dash and the 600-yd. run-walk. The test items and method of administration are as follows:¹

1. Pull-ups for Boys: The boys were instructed on the proper method of doing a pull-up - forward grasp on high bar. Student must extend arms full length and pull himself up so that his chin is above the bar. No kicking, swinging, or bending of knees is allowed, and only one trial was allowed each boy. (Figure 1)

1A. Modified Pull-ups for Girls: An adjustable door chin bar was used. The bar was adjusted so that it was approximately at nipple level. As in the boys' pull-ups, an over hang grasp was used. The student extends her legs under the bar and extends the arms fully. The arms form an angle of 90 degrees with the body line, and the body line forms an angle of approximately 45 degrees with the floor, (Figure 2). The investigator's foot was used as a brace for their heels on the floor to prevent slipping. From this position, the girls raised their bodies so that their chest touched the bar. Then they lowered themselves to the starting position. A maximum of 40 pull-ups was imposed on the girls.

2. Sit-ups: The subject was in a supine position on the floor, with his hands interlocked behind the

¹ American Association Health, Physical Education, and Recreation, AAHPER Youth Fitness Test Manual, (Washington: AAHPER, 1961 Revised), pp. 5-12.

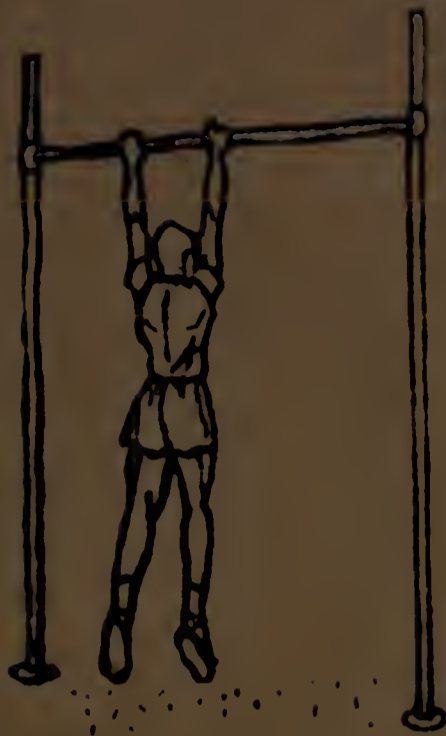


Figure 1. Pull-ups for boys

(Taken from AAHPER Test Manual, 1961 Rev., p. 6)



Figure 2. Modified pull-ups for girls

(Taken from AAHPER Test Manual, 1961 Rev., p. 7)

neck and the feet about 2 feet apart. His partner held his ankles to the floor and kept his heels in contact with the floor at all times, (Figure 3). On a signal, the student starts his sit-ups, with the partner counting. The subject sits up and touches his right knee with his left elbow, and then repeats, alternating knees and elbows, (Figure 4). A maximum of 50 for the girls and 100 for the boys. When they finished, the partners gave the score to the investigator and it was recorded.

3. Shuttle Run: This item was tested outdoors on a blacktop parking area adjacent to the school. Two permanent painted lines 30 feet apart were used. Two blocks of wood 2" x 2" x 4" were placed behind one of the lines. The other line was used as a starting line. The runner started from this line on the signal, "Ready? Go!" On this command, the student ran as fast as he could to the blocks, picked one up, ran back to the starting line, and placed the block down behind this line. He then ran back for the other block. This time when he returned to the starting line, he carried the block across the line and the watch was stopped (Figure 5). Two trials, with a short rest between, were given each student.

4. 50-yd. Dash: This item was also tested on the parking lot of the school. Two painted lines were used as start and finish lines. The investigator stationed himself at the finish line with the stop-watch. A



Figure 3. Starting position for sit-up



Figure 4. Sit-up

(Taken from AAHPER Test Manual, 1961 Rev., p. 8)



Figure 5. Shuttle run

(Taken from AAHPER Test Manual, 1961 Rev., p. 9)

student was instructed on how to properly start the runner, i.e., hand in air and the command, "Ready? Go!", given as the hand is swept down. The watch was started when the starter's hand went down, and stopped when the runner crossed the finish line (Figure 6). One trial was allowed unless a false start was noted. The time was recorded to a tenth of a second.

5. Softball Throw: A 200 foot tape measure was extended from the starting line on the ground. Another line 6 feet from the starting line was marked, and the students were instructed to stay within the two lines while taking their three throws. The throws had to be overhand. The best of the three was recorded. The throws were measured at right angles to the tape and recorded to the nearest foot. (Figure 7).

6. Standing Broad Jump: A broad jumping mat was used to test the students. This is a special mat calibrated to three inch lines, starting with 3 feet and extending to 10 feet. Each student started with his toes at the starting line. When he was ready, he sprang forward as far as he could. The distance was measured from the nearest point of his body (the heels) to the starting line. Three fair trials were allowed each student, with the best of the three being recorded to the nearest inch. (Figure 8).

7. 600-yd. Run-walk: A girls field-hockey field



Figure 6. 50-yd. dash

(Taken from AAHPER Test Manual, 1965 Rev., p. 21)

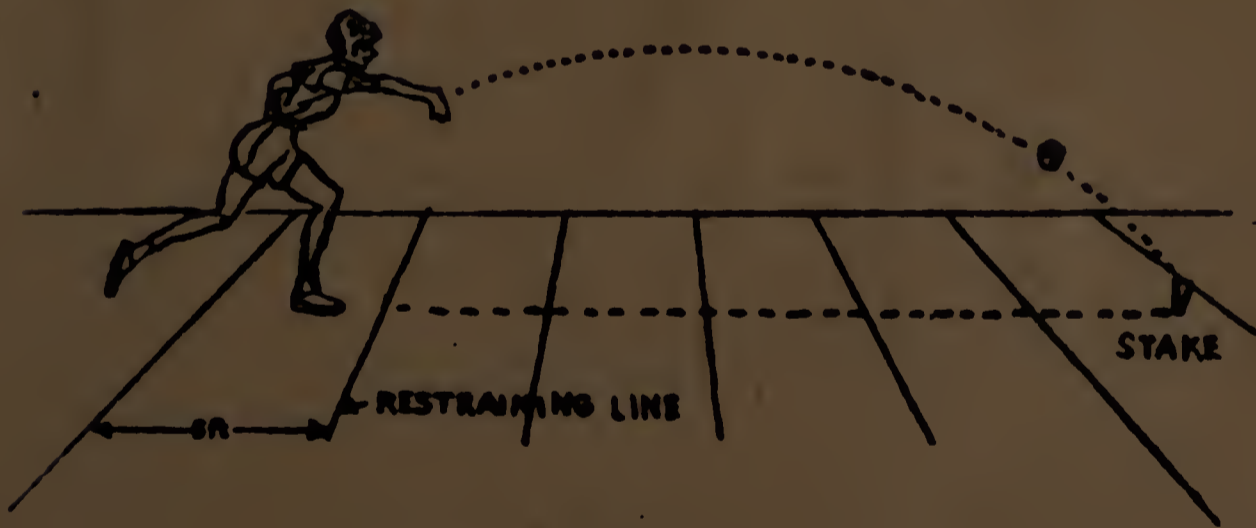


Figure 7. Softball throw

(Taken from AAHPER Test Manual, 1961 Rev., p. 12)



Figure 8. Standing Broad Jump

(Taken from AAHPER Test Manual, 1961 Rev., p. 10)



Figure 9. Girls field-hockey field used for 600-yd. run-walk

was used as the test area. Two times around the field was enough to cover the 600 yards. Each student was told to do the best he could, and to run all the way if he could make it. They were also told that they were allowed to walk if they wanted; but that if they did, their score would be lower. The class was divided into two groups by taking every other name that appeared on the scoring sheet. While one group ran, the other marked the field for them, (Figure 9). As each student came across the finish line, his score was read to him. Then when everyone was through running, the scores were recorded.

Social Acceptance. Social acceptance was measured through sociometry. Each class was tested on the same day during their Physical Education classes. At the beginning of each class, the students were told that the investigator was using their class as subjects in a paper he was writing, and that they were to answer the questions he was going to ask them. They were told to try to answer these questions as honestly as possible, and that no one but the investigator would see the answers. A piece of paper was then passed out to each student in the class. This paper contained a line in the upper right hand corner for the pupil's name, and six other blank lines in groups of three, as shown in Figure 10.

Another paper was also given to each student. This paper was a list of his classmates in alphabetical order,

NAME: _____

QUESTION 1

- 1. _____
- 2. _____
- 3. _____

QUESTION 2

- 1. _____
- 2. _____
- 3. _____

QUESTION 3

- 1. _____
- 2. _____
- 3. _____

FIGURE 10

SAMPLE OF SOCIOMETRIC TEST ANSWER SHEET

and was to be referred to whenever the student was in doubt about the proper spelling of a person's name. After each student wrote his name, the following questions were asked: (1) "With whom would you most like to work with on a class project? Three choices in order of preference."; (2) "With whom would you like to go on a picnic? Three choices in order of preference."; (3) "If you were going to have a party, whom would you invite? Three choices in order of preference." After each question, the students were reminded to place their first choice on the line numbered 1, second choice on line 2, etc. They were instructed also to turn their paper over when finished and to place their pencils down on the desk, so that the investigator would know that they were ready to go on to the next question. Ample time was allowed for each question to be answered. The papers were collected immediately after the last question was answered.

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CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

I.Q. Test. Because of the small size of the classes, it was decided to use the rank order method of correlation. Giving a rank to each student for his I.Q. was a simple matter of taking the highest I.Q. and placing him at the top with a rank of one, continuing down the ladder of names until each had a rank.

Physical Fitness Test. The physical fitness test involved much more work. Each student was weighed and measured prior to the test in order to classify him according to the Neilson-Cozens Classification Index.¹ This classification index takes into consideration the pupil's age in months, height in inches, and weight in pounds, and groups each pupil into a class. When each student has been classed, his raw score on the individual test items can be found on a designated table and the proper percentile assigned. Once each raw score has a percentile assigned to it, the percentiles are added and divided by seven in order to get an average. This average was then assigned a rank to be used in computing the rank order correlation.

¹ American Association Health, Physical Education, and Recreation, AAHPER Youth Fitness Test Manual (Washington: AAHPER, 1961 Revised), pp. 15 & 32.

Sociometric Test. The rank for the sociometric test was arrived at in the following manner. A Sociometric Tabulation Form, illustrated in Figure 11,² was used to determine the number of first, second, and third choices each pupil received. After this was determined, a numerical weight of 5 for first, 3 for second, and 1 for third was assigned the appropriate choice. These numbers were totaled to provide an index of acceptance. According to Sievers, the sum of the weighted choices has a greater range than does the total number of times chosen; moreover, it results in ties less often when assigning ranks.³

When the totals for each of the three questions were computed, they were added together to arrive at one number for an index of acceptance. This total was then assigned a rank to be used in computing the correlation. Once a rank was assigned to each pupil for each of the three tests (refer to Tables I & II), the correlation was computed.

Spearman Rank Order. The Spearman Rank Order method was used to compute the coefficient of correlation for the following combinations: (1) Social acceptability and

²D. K. Mathews, Measurement in Physical Education (Philadelphia: W. B. Saunders Co., 1958), p. 291.

³C. P. Froehlich, and K. B. Hoyt, Guidance Testing (Third edition; Chicago: Science Research Association, Inc., 1959), p. 390.

SOCIOMETRIC TABULATION FORM

| Chooser | Chosen | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----------------|--------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| | X | | | | | | | | | | | | | | | | | | | | |
| | | X | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | X | |
| | | | | | | | | | | | | | | | | | | | | | X |
| No. 1st. | | | | | | | | | | | | | | | | | | | | | |
| No. 2nd. | | | | | | | | | | | | | | | | | | | | | |
| No. 3rd. | | | | | | | | | | | | | | | | | | | | | |
| Total weighted | | | | | | | | | | | | | | | | | | | | | |

QUESTION NO. I

With whom would you most like to work with on a class project? Three choices in order of Preference.

Figure 11: Sample Copy of Tabulation Form Used in Sociometric Test

TABLE I

CLASSROOM A
LISTING OF RANKS FOR EACH OF
THREE TESTS ADMINISTERED

| Name | Rank-Socio Test | Rank-P.E. Test | Rank-I.Q. |
|-------------|-----------------|----------------|-----------|
| Wayne B. | 5 | 19 | 1 |
| Martina B. | 9 | 4 | 20.5 |
| Gary B. | 6 | 2.5 | 9 |
| Thomas C. | 19.5 | 21 | 22 |
| Edward C. | 3 | 1 | 20.5 |
| Debra C. | 4 | 6 | 7 |
| Marilyn C. | 17 | 10 | 2.5 |
| Anne C. | 14.5 | 17.5 | 17.5 |
| Sandra E. | 12 | 15 | 15 |
| Debra F. | 12 | 7 | 10.5 |
| Mary G. | 14.5 | 13 | 24 |
| Michael G. | 12 | 14 | 13.5 |
| Laurie H. | 10 | 12 | 12 |
| Carol J. | 23 | 16 | 17.5 |
| Mark J. | 21.5 | 8 | 2.5 |
| Roberta K. | 7 | 5 | 13.5 |
| Wayne L. | 18 | 25 | 8 |
| John L. | 1 | 2.5 | 6 |
| Robert M. | 24 | 22 | 4 |
| Karen S. | 16 | 11 | 16 |
| John S. | 8 | 23 | 19 |
| Margaret S. | 21.5 | 17.5 | 23 |
| Lori S. | 19.5 | 20 | 5 |
| Nancy W. | 2 | 9 | 10.5 |

TABLE II
 CLASSROOM B
 LISTING OF RANKS FOR EACH OF
 THREE TESTS ADMINISTERED

| Name | Rank-Socio Test | Rank-P.F. Test | Rank-I.Q. |
|--------------|-----------------|----------------|-----------|
| Mark B. | 11 | 21 | 7.5 |
| Fred B. | 19 | 23 | 20 |
| Elizabeth B. | 12.5 | 5 | 7.5 |
| Lisa C. | 22.5 | 15 | 1 |
| Joan C. | 15 | 9 | 17.5 |
| Donna Cl. | 9.5 | 7 | 14 |
| Bette C. | 9.5 | 3 | 9.5 |
| Michael C. | 1 | 12 | 3 |
| Donna Co. | 7 | 6.5 | 5.5 |
| Mary F. | 3 | 2 | 21 |
| George F. | 18 | 17 | 13 |
| Gordon H. | 17 | 14 | 5.5 |
| Robert H. | 21 | 16 | 17.5 |
| Kathleen H. | 6 | 10 | 9.5 |
| Alan L. | 20 | 11 | 15.5 |
| Philip L. | 8 | 12 | 22 |
| John M. | 16 | 20 | 19 |
| Richard O. | 22.5 | 22 | 23 |
| Daniel P. | 12.5 | 19 | 11 |
| Cynthia S. | 5 | 4 | 2 |
| Sonia S. | 14 | 8 | 12 |
| Leslie S. | 4 | 6.5 | 15.5 |
| Donald W. | 2 | 13 | 4 |

physical fitness; (2) Social acceptability and intelligence; and (3) Intelligence and physical fitness.

The following table contains the results of the correlations.

TABLE III

RANK ORDER CORRELATIONS FOR: SOCIAL ACCEPTANCE-
PHYSICAL FITNESS; SOCIAL ACCEPTANCE-
INTELLIGENCE; INTELLIGENCE-PHYSICAL FITNESS

| Correlations | Room A | Room B |
|------------------------------------|--------|--------|
| Social Acceptance-Physical Fitness | + .59 | + .51 |
| Social Acceptance-Intelligence | + .04 | + .31 |
| Intelligence-Physical Fitness | + .02 | + .26 |

As Table III indicates, the highest correlation in both classes was between Social Acceptance and Physical Fitness, Room A having a correlation of +.59 and Room B having a correlation of +.51. Both these scores were sufficient to resist the null hypothesis at the .01 level of confidence.

Although the other scores were not high enough to reject the null hypothesis, they all were positive, indicating a relationship, slight as it may be.

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CHAPTER V

SUMMARY AND CONCLUSIONS

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary. Is there a relationship between intelligence and physical fitness? Does the child's social acceptability have any relationship to intelligence? What relationship, if any, exists between physical fitness and social acceptability? These three questions were stated as the purpose of this study and were used as guide lines throughout the study.

In a review of related literature, it was found that the majority of the studies conducted arrived at a positive relationship between intelligence and social acceptance. With respect to intelligence and physical fitness, a relationship has been found between the two criteria; however, research in this specific area has not been too extensive, and the investigator encountered difficulties in finding available studies. Difficulties were also encountered in trying to find studies in the field of physical fitness and social acceptability. A few studies have been made in this area; but due to inadequate facilities, the investigator was unable to acquire copies of the texts containing these studies. It should be noted that the inadequacies of available facilities and the lack of extensive research in the two aforementioned areas created a constant problem for the investigator.

The two sixth grade classes used as subjects were tested for intelligence, social acceptability, and physical fitness. In testing for intelligence, the California Test of Mental Maturity was administered by the Boylston school system. The investigator devised the sociometric test, consisting of three questions, to determine social acceptability. Finally, the AAHPER Youth Fitness Test was administered by the investigator to determine physical fitness.

Because of the small number of subjects tested, the investigator decided to use the Spearman Rank Order method of computing the coefficient of correlation. A rank for I. Q. was given by taking the highest and ranking it first; and then moving down the ladder until the lowest I.Q. was ranked last. The rank for physical fitness was arrived at in the following manner. First, each student was assigned a class by using the Neilson-Cozen Classification Index. Then, according to class, the raw score of each test item was found and given a percentile. These percentiles were averaged and given a rank.

An index of acceptance was arrived at through the use of a Sociometric Tabulation form. First, second, and third choices were assigned numerical weights of five, three, and one respectively. These numerical weights were totaled, giving one number to which a rank was assigned.

When all three tests had been given ranks, the

correlations were computed with the following results: Social Acceptance and Physical Fitness were highest; Social Acceptance - Intelligence was second; and Intelligence - Physical Fitness was third. Although the Social Acceptance - Physical Fitness correlation was the only one to resist the null hypothesis at the .01 level of confidence, all scores were positive, indicating the existence of a relationship, however slight.

Conclusions. Since the highest correlation was between Social Acceptance and Physical Fitness (+.59 and +.51), the investigator must conclude that of the three areas tested, these two seem to have the greater degree of relationship. Also, because these scores rejected the null hypothesis at the .01 level of confidence, they must be considered significant.

Application
Taking these facts into consideration, it would seem that by improving a child's physical ability, his social status in the classroom could be elevated. As stated in the Introduction of this study, a child's emotional and social development is probably as important as his intellectual development. By utilizing the fact that a relationship exist between social acceptance and physical fitness, a teacher could help her students gain social acceptance by encouraging them to participate more in physical activities. Being more acceptable to his peers might enable the student to adjust and apply himself better.

As noted earlier in this chapter, very little research has been done in the area of social acceptance and physical fitness. It is suggested that more research be conducted in order to ascertain whether this relationship is truly significant.

With respect to Social Acceptance - Intelligence (+.04 and +.31), past studies have found that there is a positive relationship between the two. In this study, a positive relationship was found also. However, the correlation was not high enough to be considered significant. Since a great deal of research has been done in this area, proving the existence of a significant relationship, it must be concluded that the lack of available subjects limited the ability of this study to verify past research.

The Intelligence - Physical Fitness correlation (+.02 and +.26), was the lowest of the three areas tested. Research in this area tends to collaborate the existence of a slight positive relationship. Here, also, lack of subjects and limited research make it impossible to determine to what extent this relationship may be significant.

In closing, the investigator would like to suggest that this study be conducted again, using a larger number of subjects. Also, a negative response should be included in the sociometric test. Moreover, the use of a physical fitness test under laboratory conditions would give a more accurate indication of motor ability. One possible

choice is the Physical Fitness Index (P.F.I.). These suggested changes would widen the scope of the study, and improve the chances of establishing positive relationships where they do exist.

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