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A Comparative Study Of The Physical Fitness Of Sophomore Girls At Galena Park Senior High School Galena Park, Texas

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A COMPARATIVE STUDY OF THE PHYSICAL FITNESS OF SOPHOMORE GIRLS AT GALENA PARK SENIOR HIGH SCHOOL GALENA PARK, TEXAS

A COMPARATIVE STUDY OF THE PHYSICAL FITNESS OF SOPHOMORE GIRLS AT GALENA PARK SENIOR HIGH SCHOOL GALENA PARK, TEXAS

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To Mr. Leon English and Mr. Samuel Lindsay, the investigator is deeply greatful for the assistance rendered.

DEDICATION

To my husband, Norman Leo Lee and Mother, Mrs Frankie May Smith, I dedicate this Thesis.

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INTRODUCTION

The leaders of men in all periods of history, in practically every field of endeavor, have been those who possess strong and active bodies, as well as fertile and imaginative minds. Biblical leaders, such as Moses, David, and Paul, were men of strength as well as character. In Ancient and Medieval History, Socrates, Plato, Aristotle, Hannibal, Mark Anthony, Alexander the Great, Richard the Lionhearted, and William the Conqueror stood out among men because of their fitness and courage, as well as for their intellect.[1]

Modern history also is replete with such men: Many of our United States presidents, were men of the same calibre. George Washington defeated Nathan Hale in broad jumping with a leap over twenty three feet. Abraham Lincoln, revered as one of our greatest presidents and humanitarians, during his campaign for the presidency; one of many anecdotes describing his unusual strength.[2]

Theodore Roosevelt was probably America's greatest exponent of physical fitness; he struggled untiringly to overcome his sickly youth to

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[1]Don Cash Seaton, Physical Education Handbook (Englewood Cliffs, New Jersey: Prentice-Hall, 1969), p. 32.

[2]Ibid.

become a rugged out door enthusiast, legendary hero of the Rough Riders, and then the president who "carried a big stick."[3]

The investigator asserts that an increasing number of today's Americans, are less fit than their fathers, or their grand fathers. American children cannot match their European counterparts on simple physical fitness test as sit-ups, standing broad jump, and the 600 yard, run-walk. In fact, English girls, age ten to twelve, show superiority to American boys of the same ages in such test.[4]

Physical fitness, according to the President's Council on Fitness, is a broad quality involving medical and dental supervision and care, immunization and other protection against disease, proper nutrition , adequate rest, relaxation, good health practices, sanitation, and other aspects of healthful living. It is further stated that exercise is an element to achieving and maintaining physical fitness: Strength , speed, endurance (cardiovascular capacity), and other desirable physical qualities can only be developed through vigorous activity, but, complete fitness is achieved through a sensible balance of all these provisions adapted to age, maturity, and capability of the individual.[5]

The Late President Kennedy, went a step further and said:

> Physical Fitness is not only one of the most important keys to a healthy body, it is the basis of dynamic and creative intellectual activity. The relationship of the body

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[3] Ibid.

[4] Ibid.

[5] Ibid., pp. 32-33.

> and the activities of mind is subtle and complex. Much is not yet understood, but we do know what the Greeks knew; that intelligence and skill can only function at the peak of their capacity when the body is healthy and strong; that hardy spirits and tough minds usually inhabit sound bodies.
>
> In this sense, physical fitness is the basis of all the activities of our society, and if the body grows soft and inactive, if we fail to encourage physical development and prowess, we will undermine our capacity for thought, for work, and for the use of those skills vital to and expanding and complex America. Thus, the physical fitness of our citizens is a vital prerequisite to America's realization of its full potential as a nation, and to the opportunity of each individual citizen to make full and fruitful use of his capabilities.[6]

The need for increased attention to the physical fitness of our youth is clearly established. The investigator accepts the philosophy of John F. Kennedy that today's youth are fundamentally healthier than the youth of previous generations; however, the majority have not developed strong, agile bodies. "The softening process of our civilization continues to carry on its presistent erosion."[7]

It is of great importance, that we as physical educators take immediate steps to ensure that every American child be given the opportunity to make, and keep himself physically fit: fit to learn, understand, and grow in grace and stature.

To answer this challenge, we look to our schools and colleges as the decisive factors to influence and strengthen the physical fitness of youth today. Many of our schools have long been making efforts to assist our young people in attaining and maintaining health and

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[6] Ibid., p. 33.

[7] John F. Kennedy, Youth Physical Fitness (New York: Pocket Books, 1961), p. 2.

fitness. The investigator feels that it is difficult to develop physical excellence in youth if the physical education programs in schools are not strong and functional; therefore, physical educators should strive to upgrade their programs to the fullest amplitude. As a primary objective of physical education, the attainment of total fitness has overwhelming implications for growth and development of youth. It is essential that all students be given the opportunity to develop to maximum potential so that he can enjoy taking part in vigorous exercise appropriate to age and general ability. The key to America's physical survival is physical fitness.

STATEMENT OF THE PROBLEM

This study entails a detailed investigation of approximately fifty random sampled, sophomore girls (enrolled in Galena Park Senior High School, Galena Park, Texas) to determine their present state of physical fitness, and after treatment, compare the findings of the test, before and after.

PURPOSE OF THE STUDY

The purposes of this study are: (1) to determine the physical fitness status of sophomore girls at Galena Park Senior High School. (2) to use the results, of this study as a basis for improving the physical fitness of the students at Galena Park Senior High School.

NULL HYPOTHESES

I. There is significant difference in the performance of sophomore girls on the American Association of Health, Physical Education, and Recreation Youth Fitness Test.

II. There is no significant difference between the pre test Mean score and the post test Mean score of sophomore girls on the American Association of Health, Physical Education and Recreation Youth Fitness Test.

III. There is no significant difference between pre test scores and post test scores after the treatment of vigorous exercises has been administered.

NEED FOR THE STUDY

The physical educator is under a moral compulsion to select activities for, and adapt methods in conducting his program that will meet all the objectives of physical education. The physical fitness objective, however, is basic, in that all pupils should be assured of at least a minimal amount of this essential quality. Without this basic assurance to all pupils, other phases of the program are ineffective; consequently, definite steps should be taken to reach a state of physical fitness for each pupil in school and to institute individual, remedial, and developmental programs for those who require them.[8]

The investigator admonishes that individual needs cannot be known accurately, nor can the effects of individual programs, or general programs be known without test and retest of the individuals; therefore, measurement of physical fitness is essential for the physical educator

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[8]H. Harrison Clark, Application of Measurement to Health and Physical Education (Englewood Cliffs, New Jersey; Prentice-Hall, Inc., 1959), p. 64.

in his attempt to improve the fitness of school children; to determine their status, and to measure their progress. In fact, a knowledge of the physical fitness of boys and girls is the logical starting point for conducting effective physical education programs. The investigator feels it is therefore imperative that this study be made.

DELIMITATIONS OF THE STUDY

This study is subject to the following delimitations:

1. Approximately fifty (50) random sampled sophomore girls from one hundred fifty (150) at Galena Park Senior High School, Galena Park, Texas, were used as subjects in this study.
2. The American Association for Health, Physical Education, and Recreation Youth Fitness Test was administered, by the investigator, September of 1970 and was repeated in January of 1971. Only the scores from the two administrations of this test were used.
3. The investigator was solely responsible for the selection, administration, interpretation and analysis of data relating to this study.
4. The gymnasium and the football field were used for administering the Physical Fitness Test.

DEFINITIONS OF TERMS

For the purpose of clarification the following definitions of terms have been established for use in this study:

The American Association for Health, Physical Education, and Recreation Youth Fitness Test:

A battery of seven test items designed to give a measure of physical fitness for both boys and girls in grades five thru twelve. The test were selected to evaluate specific aspects of physical status which, when taken together, give an over-all picture of the young person's general fitness. It is the only fitness test for which national norms have been determined.[9]

1. Pull-Up: Purpose: For judging arm and shoulder girdle strength. Method: It is the pulling up of the body where the chin is extended over the top of parallel bars and the body hangs with arms and legs fully extended.
2. Sit-Up: Purpose: For judging efficiency of abdominal and hip flexor muscles. Method: The pupil lies on his back with hands placed behind the neck and fingers interlocked. Pupil sits up, touching the right elbow to the left knee, repeating and alternating sides.
3. Shuttle Run: Purpose: For judging speed and change of direction. Method: Two parallel lines thirty feet

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[9]"The Test and the National Norms" AAHPER Youth Fitness Test Manual, September, 1965, p. 7.

apart with two blocks placed behind either of the lines. Pupil runs to the blocks and picks one up and return to starting line and places the block behind the line; he then runs back and picks up the second block and returns to the starting position.

4. Standing Broad Jump: Purpose: For judging explosive muscle power of leg extensors. Method: Pupil stands with feet behind the starting line. He then jumps as far forward as possible.
5. 50-Yard Dash: Purpose: For judging speed. Method: The pupil will run as fast as he can for fifty yards.
6. Softball Throw for Distance: Purpose: For judging skill and coordination. Method: Pupil throws the ball as far as possible while remaining within two parallel lines, six feet apart.
7. 600 Yard Run-Walk: Purpose: For judging cardiovascular efficiency. Method: Pupil takes a standing start. At the signal "Ready? Go!". The pupil starts running the six hundred-yard distance. The running may be interspersed with walking.

Physical Fitness: Physical fitness means the ability to carry one's work load without staggering, to participate in recreations with ease and enjoyment, and withal to have a reservoir of endurance to meet the emergencies of life.[10]

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[10]Don Cash Seaton, Physical Education Handbook, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 7.

SUMMARY

It is impossible for youth to achieve physical excellence if physical education programs are not strong enough to meet the needs of today's youth. Physical educators must strive to upgrade their programs. Physical fitness is a basic objective of physical education. It is essential that all students be allowed to develop to their maximum potential in order for them to take pleasure in sports activity, and keep up with the fast pace of life today. Each individual should learn to enjoy taking part in vigorous exercise appropriate to age and general ability. One of the keys to longevity is physical fitness.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Funk,[11] in 1968, undertook a study to determine the effect of a physical education program on the physical fitness and motor development of a group of children classified as trainable, mentally retarded. An experimental group had a thirty minute planned physical education program for fifty-eight consecutive school days. The control group had free play, or teacher-directed recreational activity during this time. On two fitness test items, the shuttle run and sit-ups, the experimental groups improved significantly. No other satistically significant results were obtained.

Febricius,[12] conducted a study that contrasted the physical fitness development of fourth grade boys and girls who participated in a regular elementary school physical education curriculum with those who participated in a regular elementary physical education curriculum with the addition of selected calistenics. Physical fitness was measured by the Oregon Motor Fitness Test. In each class period,

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[11]Dean C. Funk, "Effects of Physical Education on Fitness and Motor Development of Trainable Mentally Retarded Children," Research Quarterly, XXXXII, No. 1 (March, 1971), pp. 30-33.

[12]Helen Febricius, "Effect of Added Calistenics on the Physical Fitness of Fourth Grade Boys and Girls," Research Quarterly ,XXXV, No. 2 (May, 1964), pp. 135-136.

three minutes and nine seconds were spent on the added calisthenics; the classes met four times per week. Results showed that both groups improved significantly in physical fitness in the six month period from September, 1962 to March 1963. The experimental group having the added calisthenics improved significantly more than the control group.

Rosenstein,[13] conducted a study to determine whether the quality of the physical education program affected the amount of improvement in physical fitness among pupils of high school age. More specifically the purposes were: (a) to compare the initial and the final fitness scores of senior high school students participating in physical education programs rated high with those participating in programs rated low; (b) to determine the relationship between physical fitness scores of athletes participating in these programs; and (c) to determine the relationship between physical fitness scores and the number of hours of out-of-school physical activity.

The New York Physical Fitness Test was administered in October and May to pupils of thirteen senior high schools whose physical education programs were rated low by members of the Bureau of Physical Education, and sixteen whose programs were rated high. The La Porte Score Card was utilized to validate these ratings. The amount of physical activity outside of class was recorded by each pupil and analyzed. Pupils participating in good programs improved significantly more in physical

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[13]Irvin Rosenstein, "Physical Fitness of Senior High School Boys and Girls Participating in Sllected Physical Education Programs in New York State," Research Quarterly, XXXV, No. 3 (October, 1964), pp. 403-405.

fitness than participants in poor programs. The greatest improvement was in strength with some gain in agility, balance, and endurance.

Knuttgen,[14] undertook his study in an attempt to contribute to the knowledge of the changes undergone by school children during the course of an academic year. The study was limited to physiological fitness as measured by (a) a test of physical performance, and (b) a test of circulo-respiratory fitness.

Eighty male Danish students were tested four times during an academic year with the Youth Fitness Test of the American Association for Health, Physical Education and Recreation and six times during the same year with a test of circulo-respiratory fitness employing a bi-cycle ergometer. An overall gain in fitness was found during the course of the nine months period which could be attributed to the program in physical education. It was concluded that the Danish school's physical education program had definite, positive effects on fitness.

Namiko,[15] made a comparison study to determine the physical fitness of children nine to twelve in Iowa and Tokyo. For this study, 397 Tokyo children were used. The selective test battery included: sit-ups, pull-ups, standing broad jump, shuttle run, forward bend, grasshopper, and fifty yard dash.

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[14]Howard G. Knuttgen, "Fitness of Danish School Children During the Course of One Academic Year," Research Quarterly, XXXIV, No. 1 (March, 1963), pp. 34-40.

[15]Ikeda Namiko, "A Comparison of Physical Fitness of Children in Iowa, USA, and Tokyo, Japan," Research Quarterly, XXXIII (December, 1962), p. 41.

Namiko concluded that Iowa children were heavier, taller and had longer legs than Tokyo children; but, Tokyo children scored better in all motor performance test except one, the sit-up. A comparison of the physical education program in these schools was also made and showed that Tokyo children had more chances for activity through physical education classes than the Iowa group.

Rupiper,[16] in his comparative study, used 345 seventh grade students in a single junior high school during their regularly scheduled physical education period. The study consisted of 168 boys and 177 girls in the seventh grade.

The purpose of this study was to compare the results of the test and determine if participation in sports activities outside of school makes a difference.

Rupiper found that the highest percentage of failures for girls, which were relatively similar, were found on the back muscles test, po psoas muscles and the hamstring muscles of the Kraus-Weber Test Battery.

A comparison was made between the fifty-two (30.95%) boys and seventy eight (44.07%) girls who failed the test. The differences between the failure for boys who participated in sports and those who did not participate was not statistically significant.

Sloan,[17] in 1962, undertook a study to determine the physical fitness of college students in South Africa, United States of America,

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[16]John Rupiper, "Physical Fitness of Seventh Grade Children," Research Quarterly, XXXII, No. 2 (January, 1959), p. 420.

[17]A. W. Sloan, "Physical Fitness of College Students in South Africa, United States of America, and England," Research Quarterly, XXXIV, No. 2 (May, 1963), pp. 244-247.

and England. The Harvard Step Test was performed by male students of physical education and male sophomores not specializing in physical education in Cape Province (South Africa), North Carolina, and England. A modified Harvard Step Test was performed by corresponding groups of women.

Male and female physical education students age eighteen to twenty-five years were used in this investigation. Students were randomly selected from the physical education program at Cape Province (South Africa), North Carolina, and London and Exeter (England). The Harvard Step Test was selected as a good single procedure for assessing fitness for strenuous muscular activity; it has the merit of simplicity, and the same observer, applying the same standards, can be responsible for all the test.

The investigator found that there was no correlation between fitness index, and height, weight, or time devoted to organized physical training. Menstruation did not impair the performance of women students. And lastly, the rapid method of calculating fitness index gave results almost identical with those obtained from the original, longer method.

Saunders,(18) in the school year 1965-1966, conducted a study to compare some aspects of physical fitness of high school children who elected to take physical education with those who did not.

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[18]Ronald J. Saunders, "Physical Fitness of High School Students and Participation in Physical Education Classes," Research Quarterly, XXXX, No. 3 (October, 1969), pp. 552-560.

The AAHPER Youth Fitness Test Battery, a trunk flexion test, and trunk extension test were administered to (ninety-nine percent) of the boys and girls in a senior high school, ages fourteen to eighteen. Children were grouped according to electives selected.

Saunders found that in the case of boys, the mean difference in fitness scores of those who had had seven or eight semesters of physical education (seniors) compared with age-matched boys who had never elected physical education was about the same as the mean differences of the boys with one to two semesters (freshmen) compared with the age-matched boys who had not elected physical education. The girls (juniors or seniors) who had elected physical education during all semesters were markedly superior in physical education. But this was not true in the freshman comparison for girls, indicating an influence of the physical education class activity.

It was concluded that one cannot be sure the fitness of boys and girls enrolled in physical education is due to participation in that class. Similarly, the intermediate fitness of those in band or the inferior fitness of those in art and chorus cannot with assurance be ascribed to participation in these activities. It is logical to expect the more fit children and the more skilled in sports to select physical education as an elective. If this is the case, it is evident that when given a free choice, high school children will gravitate toward those activities in which they are already skilled and avoid those in which they are not.

Vrijens,[19] in 1968, conducted a study to discover whether it was possible to improve physical fitness of adolescents by inserting interval circuit exercises in a regular physical education program.

A group of eleven adolescents with a mean age of sixteen point seven years was found willing to participate in the experiment. Their performances was compared with those of a control group which took part only in regular scheduled physical education classes. The latter group was composed of nine adolescents with a mean age of seventeen point one year. The groups were considered as equivalent. Subjects in the experimental group participated in a special training program.

The Circuit Training Program , which the investigator employed to collect his data, was administered to the experimental group three times weekly for six weeks.

The findings of the investigator indicated that favorable effects on both functional and morphological parameters were obtained. Maximum oxygen intake and oxygen pulse were increased. Pulse rate adaptation was more efficient and heart volume was enlarged. Muscular development could be observed; especially the chest, thigh , and arm girths were increased. The effect upon ventilation was minor.

The investigator concluded, that the results obtained under strict experimental conditions demonstrate that physical fitness of adolescents can be improved after only a few weeks by inserting intensive exercises of short duration in a regular physical education program. Therefore,

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[19]Jacques Vrijens, "The Influence of Interval Circuit Exercises on Physical Fitness of Adolescents," Research Quarterly, XXXX, No. 3. (October, 1969), pp. 595-598.

emphasis should be given to the significant value of circuit training for the regular physical education school program.

Sengstock,[20] in 1962, conducted an investigation to determine if mentally retarded boys differed from intellectually normal boys in physical fitness. The AAHPER Youth Fitness Test Battery was administered to ninety mentally retarded boys of comparable chronological age and intellectually normal boys of comparable mental age in the performance of test of physical fitness. These boys were drawn from public school districts in Onondaga County, New York.

Sengstock found that the Old Normal Group of boys was significantly superior to the Educable Mentally Retarded groups of boys on all of the seven test of physical fitness. This superiority was maintained upon examination of the percentile scores which equated individuals on the basis of height and weight. The Educable Mentally Retarded group was significantly superior to the Young Normal groups of boys on five of the test, and overall, the Educable Mentally Retarded groups performance was almost midway between the mean performance of the Old Normal and Young Normal group of boys.

The investigator concluded that there is a relationship between intelligence and motor performance, but to what extent cannot be determined. The Educable Mentally Retarded group was superior to the Young Normal group with which they were matched, but the overwhelming advantage of height and weight of the Educable Mentally Retarded group contaminated this aspect of the study.

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[20]Wayne L. Sengstock, "Physical Fitness of Mentally Retarded Boys," Research Quarterly, XXXVII, No. 1 (March, 1966), pp. 113-120.

Berger, [21] undertook a study to determine whether there was a difference in physical fitness among black and white children age twelve to fifteen years.

The entire enrollment of 115 boys in the seventh grade at one junior high were tested for physical fitness. The AAHPER Youth Fitness was administered to measure performance. The Index of Status Characteristics was administered to measure performance and social status. Two groups were set up, consisting of thirty black and thirty white boys, ages twelve to fifteen years.

The investigator found that there were no significant differences between the groups in age, height, weight, and socioeconomic level. The black students surpassed the white students significantly in the shuttle run, fifty yard dash, 600 yard run-walk and composit fitness scores.

Berger concluded that black male students of similar socioeconomic level to white students in the seventh grade, have a higher level of physical fitness.

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[21]Richard A. Berger, "Comparison of Physical Fitness Scores of Black and White Seventh Grade Boys of Similar Socioeconomic Level," Research Quarterly, XXXX, No. 4 (December, 1969), pp. 666-669.

CONCLUSION OF RELATED LITERATURE

In conclusion, the writer found several studies related to her own. This gives some indication that physical educators are aware of the unfitness of youth today and they are trying to find the answer.

A well developed program of physical education will contribute to each person's life a unique proportion of: strength, endurance, personal ability, a knowledge of games, an understanding of the importance of exercise, high standards of sportsmanship and conduct, and other activities that can be used throughout the individual's lifetime. These are the goals that we as physical educators must strive to reach to make a strong and fit America.

Only through research, the upgrading of physical education programs, and the consciousness of the general public of the need for total fitness can our nation survive.

CHAPTER III

PROCEDURES FOR COLLECTING AND ANALYZING DATA

In September of 1970, the investigator administered The American Association for Health, Physical Education, and Recreation Youth Fitness Test to fifty random sampled sophomore girls at Galena Park Senior High School, Galena Park, Texas, to arrive at the fitness scores for each girl.

The data utilized in the study was gathered from both documentary and human sources. The documentary sources used were books, periodicals and dissertations relating to the study. The 360 Fortran Computer was used for computing the data. The fifty random sampled sophomore girls in Galena Park Senior High School were the human sources employed in this study.

To collect the data the investigator employed the American Association for Health, Physical Education and Recreation Youth Fitness Test. This test consisted of seven items:

1. Pull-ups: Purpose: For judging arm and shoulder girdle strength. Method: It is the pulling up of the body where the chin is extended over the top of parallel bars and the body hangs with arms and legs full extended.

2. Sit-ups: Purpose: For judging efficiency of abdominal and hip flexor muscles. Method: The pupil lies on his back with hands placed behind the neck and fingers interlocked. Pupil sits up, touching the right elbow to the left knee, repeating and alternating sides.
3. Shuttle Run: Purpose: For judging speed and change of direction. Method: Two parallel lines thirty feet apart with two blocks placed behind either of the lines. Pupil runs to the blocks and picks one up and return to starting line and places the block behind the line; he then runs back and picks up the second block and returns to the starting position.
4. Standing Broad Jump: Purpose: For judging explosive muscle power of leg extensors. Method: Pupil stands with feet behind the starting lines. He then jumps as far forward as possible.
5. 50-Yard Dash: Purpose: For judging speed. Method: The pupil will run as fast as he can for fifty yards.
6. Softball Throw for Distance: Purpose: For judging skill and coordination. Method: Pupil throws the ball as far as possible while remaining within two parallel lines, six feet apart.

7. 600 Yard Run - Walk: Purpose: For judging cardiovascular efficiency. Method: Pupil takes a standing start position. At the signal "Ready? GO!". The pupil starts running the six hundred yard distance. The running may be interspersed with walking.

Prior to administering the test, the subjects were given warm-up exercises. The gymnasium and football field were used for administering the test; no special equipment was needed with the exception of a bar for pull-ups. Stations were set up for each test to utilize time and space. Timers and scorers were selected to work at each station but were supervised by the investigator.

After the pre-test scores had been recorded, the samples were administered vigorous exercises such as: Toe Touching, Knee Raising, Lateral Bending, Arm Circling, Rocking Sit-Ups, Chest and Leg Raising, Knee Push-Ups, Run and Stride Jumping and Elbow Push-Ups. These exercises were performed by the samples in their regular physical education classes, fifteen minutes a day, for a period of four and one half months.

To determine if there had been any improvement in the fitness status of sophomore girls at Galena Park Senior High School, Galena Park, Texas, the American Association for Health, Physical Education and Recreation Youth Fitness Test was readministered during the first week of January in 1971.

ANALYSIS

The pre-test Mean and post-test Mean were compared to determine if there was any significant difference between the two; there was a difference worth reporting.

When dealing with small samples, test of significant difference between two sample Means are based on the student - t distribution instead of the normal curve. Specifically, they are based on this statistic:

$$T = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(N - 1)\, S_1^2 + (N_2 - 1)\, S_2^2}{N_1 + N_2 - 2}} \cdot \sqrt{\frac{1}{N} + \frac{1}{2}}}$$

Making the assumptions that the two samples came from populations that can be approximated closely with the normal curve and that these two populations have equal standard deviations, we test the hypothesis $U_1 \neq U_2$ at the .05 level of significance.[22]

The pre-test Mean score and post-test Mean score were compared and it was found that there was no significant improvement. This information is shown in the table depicting the Mean and Standard Deviation.

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[22]John E. Freund, Modern Elementary Statistics, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1960).

TABLE I

MEANS AND STANDARD DEVIATION

	Pre Test	Post Test
Mean	80.48	80.24
Standard D.	7.42	6.48

Several test were utilized in analyzing the data. The T test of significance was found to be the appropriate one to use. The T test was computed on a .05 level of significance. This .05 level of significance was determined by the investigator prior to computing the test.

To further simplify the analysis of data, the following tables were prepared:

TABLE II

The T Values are computed by comparing the Mean of the variable on the verticle axis to the Mean of the variable on the horizontal axis. T Values below the principle diagonal should be of opposite sign than that printed.

ANALYSIS FOR INDEPENDENT T'S

	Pre Test	Post Test
Pre Test I	0.0	0.1705500
Post Test I	0.1705500	0.0

TABLE III

The T Values are computed by comparing the Mean of the variable on the verticle axis to the Mean of the variable on the horizontal axis. T Values below the principle diagonal should be of opposite sign than that printed.

ANALYSIS OF CORRELATED T'S

	Pre Test I	Post Test I
Pre Test I	0.0	0.5135334
Post Test I	0.5135334	0.0

INTERPRETATION OF DATA

In order to simplify the interpretation and the findings of the data, the investigator will list the null - hypotheses, then the findings.

Null Hypothesis:

I. Hypothesis: There is no significant difference in the performance of sophomore girls on the American Association of Health, Physical Education, and Recreation Youth Fitness Test.

II. Findings: There was little or no significant difference in the performance of sophomore girls on

the American Association for Health, Physical Education and Recreation Youth Fitness Test as shown by the Means and Standard Deviation Tables.

II. Hypothesis: There is no significant difference between the pre-test Mean score and the post-test Mean score of sophomore girls on the American Association of Health, Physical Education and Recreation Youth Fitness Test.

Findings: There was little or no difference between this two sets of Mean scores. The pre-test Mean score was 80.48 and the post-test Mean score was 80.24.

III. Hypothesis: There is no significant difference between pre-test scores and post-test scores after the treatment of vigorous exercises.

Findings: There was little or no significant difference between these two sets of scores - pre test Means - 80.48 - Standard Deviation - 7.42, post test Means - 80.24 - Standard Deviation - 6.48.

SUMMARY

The raw score data collected from the fifty random sampled sophomore girls, were computerized by the 360 Fortran Computer. The information fed - back by the computer was analyzed and interpreted by the investigator.

Due to the fact that there was no improvement of subjects after the treatment of vigorous exercises was administered proves to the investigator that this treatment was not reliable in improving the fitness of sophomore girls at the Galena Park Senior High School, Galena Park, Texas.

The tables listed in the thesis shows that there was no sifnificant difference in any of the stated null - hypotheses.

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The investigator found several studies related to her own. This gives an inducation that physical educators are aware of the physically unfit youth of today and are attempting to find the answer.

Through research, the upgrading of the physical education program and the consciousness of the general public of the need for total fitness of the population, can our nation survive.

This study was undertaken to determine the physical fitness status of sophomore girls at the Galena Park Senior High School, Galena Park, Texas.

The data utilized in the study was gathered from both documentary sources and human sources. The documentary sources of data that was used were books, periodicals and theses relating to the study. Also the 360 Fortran Computer was employed for computing the data. Fifty random sampled sophomore girls in Galena Park Senior High School, Galena Park, Texas were the human sources of data.

To collect the data, the investigator employed the American Association for Health, Physical Education and Recreation Youth Fitness Test. A total fitness score was determined for each student.

Prior to administering the test, the subjects were given warm-up exercises. The gymnasium and football field were used for administering the test. No special equipment was needed with the exception of a bar for pull-ups. Stations were set up for each test to utilize time and space. Timers and scorers were selected to work at each station but were supervised by the investigator.

After the pre-test scores have been recorded, the samples were administered vigorous exercises such as: Toe Touching, Knee Raising, Lateral Bending, Arm Circling, Rocking Sit-Ups, Chest and Leg Raising, Knee Push-Ups, Run and Stride Jumping and Elbow Push-Ups. These exercises were performed by the samples in their regular physical education classes, fifteen minutes a day, for a period of four and one half months.

To determine if there had been any improvement in the fitness status of sophomore girls at Galena Park Senior High School, Galena Park, Texas, the American Association for Health, Physical Education and Recreation Youth Fitness Test was readministered in January 1971.

CONCLUSIONS

On the basis of the findings in the investigation the following conclusions were formulated:

1. There was a slight difference between the post test and the pre test of the samples due to the fact that the Mean of the pre test was higher than the Mean of the post test.

2. The treatment of vigorous exercises administered did not help the subjects to achieve greater fitness.
3. This study could have been more extensive.
4. There could have been two groups of 50 or more random sampled sophomore girls at Galena Park Senior High School, instead of one. Thus the study would have been more detailed, and the data more extensive.

RECOMMENDATIONS

The investigator in light of the summary of the findings and the conclusions recommends that:

1. the program of physical education at Galena Park Senior High School, Galena Park, Texas, place a greater emphasis on physical fitness.
2. the testing in physical fitness be a continuous part of the evaluation process in the girls physical education program at Galena Park Senior High School, Galena Park, Texas.
3. further studies be made to determine the rate and amount of achievement in physical fitness among students in physical education classes over prescribed periods of time.

4. further studies be made to determine the differences in physical fitness among activity participants in various kinds of activities.
5. that the American Association for Health, Physical Education and Recreation be used as the evaluation instrument.

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