

A STUDY OF PHYSICAL FITNESS TESTS GIVEN TO
FRESHMAN BOYS AT DICKINSON COUNTY
COMMUNITY HIGH SCHOOL, 1963-64

by

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INTRODUCTION

The strength of our democracy is no greater than the collective well-being of our people. The vigor of our country is no stronger than the vitality and will of our countrymen. The level of physical, mental, moral, and spiritual fitness of every American citizen must be our constant concern.¹

As educators, we are all concerned with each individual's physical, mental, social and moral well-being. We know these areas cannot be easily divided, and their development must be kept to some degree in proper relationship to one another in order to cultivate a "well rounded" person.

One region of primary importance is the physical aspect of the individual. If the physical fitness of the person is neglected and all other areas are developed, the person's contributions to society are lost. The mind cannot perform at its peak capacity unless the body cooperates.²

¹Presidents' Council On Youth Fitness, "A Presidential Message to the Schools on the Physical Fitness of Youth," Youth Physical Fitness, (Washington, D. C.: U. S. Government Printing Office, 1961), Foreward.

²R. M. Marshall, "Toughening Our Soft Generation," The Saturday Evening Post, 235:13-17, June 23, 1962.

The need for increased attention to the physical fitness of our nation's youth is clearly established. Although today's young people are fundamentally healthier than the youth of any pervious generation, the majority have not developed strong, agile bodies.³ Since the "Seven Cardinal Principles of Education" were announced in 1918, schools have held as an objective of education the development of good health and physical efficiency. There needs to be continuing cooperative efforts of school board members, school administrators, teachers, and organized citizenry in strengthening our physical fitness programs.⁴

Every generation has complained of its lack of fitness, particularly in times of war. During World War II and the Korean Conflict our country became very concerned about the large percentage of draftees who were rejected from military service. Each war awakened a national concern for our physical well being only to be followed by a decline in the emphasis on fitness.⁵

Following the Korean Conflict of 1951 the first

³Youth Physical Fitness, loc. cit.

⁴President's Council on Youth Fitness, Youth Physical Fitness, (Washington, D. C.: U. S. Government Printing Office, 1961), p. 3.

⁵George Walton, "Uncle Sam's Rejects," The Saturday Evening Post, 235:10, December 8, 1962.

stress in the history of our country was placed on physical fitness during a peace time era. The dangerously low level of physical fitness of the youth of America was officially recognized as a problem of national concern when, in June 1956, President Dwight D. Eisenhower established the President's Council on Youth Fitness. This action resulted from the discovery by the Kraus-Weber tests that the physical fitness of American youth was far below that of their European counterparts.⁶

The Kraus-Weber tests utilized six simple tests of muscular strength and flexibility. These tests were administered to 4,264 American children, six to nineteen years of age, and 2,870 children of corresponding ages in Austria, Italy, and Switzerland. Almost 58 per cent of the American children failed one or more of the tests. Only nine per cent of the European children failed one or more of the tests.⁷

With the Kraus-Weber report being published, President Eisenhower urged immediate attention to our deteriorating level of physical fitness. During the Eisenhower administration, Mr. Charles B. (Bud) Wilkinson, head football

⁶Donald R. Casady, and others, Handbook of Physical Fitness Activities, (New York: The MacMillan Company, 1965), p. 3.

⁷Ibid.

coach of the University of Oklahoma was appointed as special consultant of the Youth Fitness Program. Under his guidance, pilot school studies were made on performance of eight thousand five hundred boys and girls from grade five to twelve in numerous states. These tests were conducted in order to establish national norms for the fitness test so that comparisons of the fitness status of similar age groups could be made. The results of this study was the launching of the Youth Fitness Project in 1957 by the American Association for Health, Physical Education and Recreation.⁸

The President's Council on Youth Fitness was continued by the late President, John F. Kennedy, while he served his time in the White House. Under the Kennedy administration, Mr. Wilkinson continued as the special consultant. The Fitness Program gained popularity and became an area of national concern. In a Presidential message to the schools on the fitness of youth, President Kennedy stated:

It is of great importance that we take immediate steps to ensure that every American child be given the opportunity to make and keep himself physically fit--fit to learn, fit to understand, to grow in grace and stature, to fully live.⁹

⁸AAHPER, Youth Fitness Test Manual, (Washington, D. C.: National Education Association, 1960), Foreward.

⁹Youth Physical Fitness, loc. cit.

Following Mr. Wilkinson's resignation from the council, President Lyndon B. Johnson appointed Stan Musial, popular and all time great baseball player for the St. Louis Cardinals, to lead our physical fitness program.

Progress has been slow at times since the beginning of the President's Youth Council on Physical Fitness but the public shows signs of interest and concern. The complete success of a fitness program will depend upon the leadership and enthusiasm of well trained men and women in areas of health, physical education, and recreation. These leaders need to meet the challenge by directing programs to contribute to the fitness of our youth. Most Americans are concerned about their physical fitness, but they need guidance.

PURPOSE OF PHYSICAL FITNESS TESTING

Valid tests of physical fitness have long been a part of any good physical education program. Only through these tests can standards be developed to measure achievement and diagnose weaknesses. These physical achievement tests provide self-evaluation and a strong motivation for development within the individual pupil.¹⁰

Physical fitness tests are used also to determine

¹⁰Youth Physical Fitness, op. cit., pp. 8-9.

the manner in which students should be grouped to insure groups of similar levels of fitness.¹¹ The social relationship to the students involved will be more conducive to learning if they participate with others of their own sex, size, maturity, strength, speed, and skill. Tests and measurements are useful only if they help the teacher to do a better piece of work. Physical fitness tests, like any other tests, should be given with some purpose in mind.¹²

After the physical educator evaluates the physical fitness test given he should be in a better position to prescribe a program of activity. This program should effectively bring about rapid improvement for those with handicaps, limitations, or weaknesses discovered in testing.

PURPOSE OF THE PROBLEM

The purpose of this problem was threefold. The first purpose was to analyze the improvement of fitness by the students of Dickinson County Community High School from fall to spring testing so that adjustments and changes needed to improve the program could be made.

The second purpose was to determine how the freshman

¹¹Casady, op. cit., p. 182.

¹²Edward F. Voltmer and Arthur A. Esslinger, The Organization and Administration of Physical Education, p. 509.

boys at Dickinson County Community High School ranked in fitness with the National Youth Fitness Test in comparison to other similar age groups in the United States.

The third purpose was to provide the Kansas State University Physical Education Department with information about one of the high schools in Kansas in relation to the physical fitness problem.

DEFINITIONS OF TERMS

Fitness. The overall well being of an individual, which has moral, social, emotional and physical components.¹³

Physical Fitness. A mixture of the best possible bodily health plus the physical condition to perform every day and desired tasks to successful completion without undue fatigue.¹⁴

Endurance. The ability to sustain prolonged activity. The ability to maintain a muscle in a state of contraction against a load or to repeat single contractions in rapid succession are measures of muscular endurance.¹⁵

¹³Fred V. Hein, "What is Physical Fitness?", NEA Journal, 51:34, February, 1962.

¹⁴Casady, op. cit., p. 7.

¹⁵H. Harrison Clarke, Application of Measurement to Health and Physical Education, (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1959), p. 222.

Agility. Speed in changing body positions or in changing directions.¹⁶

Mean. The sum of the scores divided by their number, commonly called average or a score which represents all scores.¹⁷

Fatigue. Decrease in work capacity caused by work itself.¹⁸

Range. The measure of variability showing the extreme scores of lowest and highest.¹⁹

Percentile. Measurement of decile points in the distribution.²⁰

TEST ADMINISTRATION

The National Youth Fitness Test was given for this study to all freshman boys who entered Dickinson County Community High School during the 1963-1964 school year. The participants consisted of fifty-five boys in the required physical education classes.

¹⁶Ibid.

¹⁷Ibid., p. 428.

¹⁸Peter V. Karpovich, Physiology of Muscular Activity, (Philadelphia: W. B. Saunders Company, 1959), p. 235.

¹⁹Clarke, op. cit., p. 434.

²⁰Ibid., p. 431.

The complete testing battery consists of seven test items. The test items include: pullups, situps, standing broad jump, shuttle run, fifty-yard dash, softball throw for distance, and the six hundred yard run-walk event. The tests were given twice during the school year. The fall testing was done during the last half of the first week and the first half of the second week of school. The spring testing was completed during the last week of the students' freshman year.

The physical fitness classifications were based on the students' ages at the time of each testing so as to give as valid results as possible.

The entire testing program started with fifty-five students and ended in the spring with the same fifty-five boys. A program of selected activities was administered to the physical education classes between the times of testing. The activities included tumbling and apparatus work, volleyball, basketball, some weight-lifting, wrestling, and track and field.

Prior to administering the test the students were encouraged to do their very best and to give an all out effort. Empirically it appeared that most of those tested followed these instructions. Each test event was fully explained or demonstrated prior to the testing. The boys, however, were not aware that a study was being made of their

results.

MUSCLE GROUPS AFFECTED

The test battery is heavily weighted in certain aspects of muscular fitness. The seven test items tested for highly related factors.

The pullup test was testing the strength and endurance of the upper arm and forearm muscles. The situps showed the strength and endurance of the abdominal and hip flexor muscles.

Power of the leg muscles, speed and agility was tested by the shuttle run. The fifty yard dash also tested for power of the leg muscles and speed along with a small degree of endurance.

The standing broad jump tested the explosive power of the leg muscles along with the power of the feet.

Power of the upper arm muscles, forearm muscles, and wrist was tested with the softball throw for distance. Arm and shoulder coordination was also a factor in this event.

The 600 yard run-walk indicated the endurance, not only of the legs, but also the endurance of the cardio-respiratory systems under sustained working conditions.

NORMS USED

The American Association of Health, Physical Education and Recreation held a fitness meeting in 1956, with a view of surveying the fitness of the United States youth. In 1957, a committee of the Research Council acting for the National Association agreed upon a set of tests to be administered to a nationwide sampling of boys and girls between the ages of ten and seventeen.²¹ Test directions were prepared and administered during the school year 1957-1958 at various schools throughout the United States. School children tested included those from urban and rural, public and private boys' and girls' and co-educational schools. The test was given to 8,500 students throughout the nation. Norms were then established according to age and sex from the results of the pilot school studies.

The following tables show the norm scale for excellent, good, satisfactory, and poor classifications of each test item of 14 and 15 year old boys.

²¹William R. Campbell and Richard H. Pohndorf, "Physical Fitness of British and United States Children," Health and Fitness in the Modern World, 1961, pp. 8-10.

TABLE I

CHART OF NORMS ESTABLISHED FOR 14 YEAR OLD BOYS BY
THE PRESIDENT'S COUNCIL ON YOUTH FITNESS*

Pull ups	Sit ups	Standing broad jump	Shuttle run	50 Yd. dash	Softball throw	600 Yd. run-walk
Excellent						
10	99	7'2"	9.4 secs	6.5 secs	190'	1:50 mins
Good						
9	98	7'1"	9.5	6.6	189'	1:51
	90	7'0"	9.6		185'	1:54
8	85	6'11"	9.7	6.7		1:56
	80	6'10"			180'	1:58
7	75	6'9"	9.8	6.8	175'	2:00
	70	6'8"			170'	2:02
	65		9.9	6.9	165'	2:04
6	60	6'7"	10.0	7.0	163'	2:05
Satisfactory						
5	59	6'6"	10.1	7.1	162'	2:06
	55	6'5"	10.2		160'	2:10
	50	6'4"	10.3	7.2	155'	2:12
		6'3"	10.4		150'	2:16
4	44	6'1"	10.5	7.3	147'	2:18
Poor						
3	43	6'0"	10.6	7.4	146'	2:19
	40	5'11"	10.7	7.5	145'	2:22
2	38	5'9"	10.8		140'	2:25
	36	5'7"	10.9	7.6	135'	2:28
1	33	5'7"	11.0	7.7	131'	2:30

*Youth Physical Fitness, op. cit., pp. 44-54.

TABLE II

CHART OF NORMS ESTABLISHED FOR 15 YEAR OLD BOYS BY
THE PRESIDENT'S COUNCIL ON YOUTH FITNESS*

Pull ups	Sit ups	Standing broad jump	Shuttle run	50 Yd. dash	Softball throw	600 Yd. run-walk
<hr/>						
Excellent						
10	99	7'8"	9.3 secs	6.2 secs	207'	1:43 mins
<hr/>						
Good						
9	98	7'7"	9.4	6.3	206'	1:44
	90	7'6"	9.5	6.4	200'	1:46
	85	7'5"	9.6		195'	1:48
8	80	7'4"		6.5	190'	1:50
	75	7'3"	9.7			1:52
	70	7'2"	9.8	6.6	185'	1:54
	65	7'1"	9.9		180'	1:56
7	60	7'0"	10.0	6.7	182'	1:59
<hr/>						
Satisfactory						
6	59	6'9"	10.1	6.8	181'	2:00
	58	6'8"			180'	2:02
	54	6'7"	10.2	6.9	175'	2:04
	50				170'	2:06
	46	6'6"	10.3		165'	2:08
5	45	6'5"	10.4	7.0	164'	2:09
<hr/>						
Poor						
4	44	6'4"	10.5	7.1	163'	2:10
	42	6'3"	10.6		160'	2:14
3	40	6'2"	10.7	7.2	155'	2:16
	38	6'0"	10.8		152'	2:18
2	35	5'11"	10.9	7.3	150'	2:20
<hr/>						

*Youth Physical Fitness, op. cit., pp. 44-54.

TEST AND RESULTS

Following are the specifications and instructions given prior to each test item.²² The results of the test follow the instructions.

PULLUPS

A regular adjustable horizontal chinning bar was used so that each student could hang with both arms and legs fully extended. The overhand grip (palms forward) was used. The feet were not permitted to touch the floor. From this hanging position the body was pulled up with the arms until the chin was over the bar. The student then lowered himself until the elbows were fully extended. This routine was repeated as many times as possible.

The body was not allowed to swing during the exercise and the movement was to be a steady, continuous pull rather than a snap or jerking movement. If a student started to swing the tester placed an extended arm across the thighs of the student to stop the swing. The results of the pullup test are shown in Table III.

Table III indicates that the boys of Dickinson County Community High School in the freshman class ranked below average in comparison to the norms established by the

²²Youth Physical Fitness, op. cit., pp. 44-54.

President's Council on Youth Fitness on the pullup test. Only two boys or 3.64 per cent of those taking the fall test ranked excellent according to the norms shown in Tables I and II. Twenty-two or 40.0 per cent of the boys rated poor on the pullup testing in the fall. There was a range of 12 pullups with a mean score of 4.28 pullups per boy in the fall testing.

TABLE III
RESULTS OF THE PULLUP TEST

Classification	Fall		Spring	
	Number	Per cent	Number	Per cent
Excellent	2	3.64	5	9.09
Good	20	36.36	17	30.91
Satisfactory	11	20.00	11	20.00
Poor	22	40.00	22	40.00
Total	55	100.00	55	100.00
	Range	0-12	Range	0-13
	Mean	4.28	Mean	4.57

There was an increase shown in the mean score from 4.28 pullups per boy in the fall to 4.57 pullups per boy in the spring. The excellent category increased from two to five boys, the good group decreased 5.45 per cent, and the satisfactory and poor groups remained the same. This means that twenty-two out of fifty-five boys failed to do a

maximum of four pullups in both the fall and spring testing.

SITUPS

In this test the pupils were paired to aid one another. One half of the students did situps while the other half held the ankles of those being tested. Each pupil being tested lay in a position on his back with the legs extended and the feet spread to a comfortable position. The hands, with the fingers interlocked, were grasped behind the neck. The partner gently held the ankles of the pupil down keeping the heels in contact with the floor at all times and counted the repetitions of sitting up.

The situps were done by raising the head and chest forward, and at the same time rotating the trunk to the left, touching the right elbow to the left knee. They then returned to the starting position. The pupil then sat up again turning the trunk to the right and touching the left elbow to the right knee. This procedure was repeated alternating sides as many times as possible or until the pupil reached the score which was indicated excellent by the norms of the Youth Fitness Test. One complete situp was counted each time a student returned to his starting position. The results of the situps are shown in Table IV.

The results of this test were surprisingly high. The mean score of the situps done by the freshman boys of

Dickinson County Community High School was 55.55 situps per boy in the fall. Of those tested, fourteen boys or 25.45 per cent were classified in the excellent category with 38.18 per cent in the poor category.

TABLE IV
RESULTS OF THE SITUP TEST

Classification	Fall		Spring	
	Number	Per cent	Number	Per cent
Excellent	14	25.45	27	49.08
Good	8	14.55	8	14.55
Satisfactory	12	21.82	12	21.82
Poor	21	38.18	8	14.55
Total	55	100.00	55	100.00
	Range	1-100	Range	14-100
	Mean	57.55	Mean	73.82

Results of the spring testing were highly improved. The number of students in the poor category decreased from twenty-one to eight and 49.08 per cent of the students were in the excellent category as compared to 25.45 per cent in the fall. The mean score was 73.82 situps per boy for the spring testing which showed an improvement of 18.27 situps per individual.

The improvement of the boys in the situps, from 57.55 to 73.82 per boy, raised the mean score of the class from

the satisfactory to the good category as indicated in the norms established by the President's Council on Youth Fitness.

SHUTTLE RUN

The individuals were tested one at a time. One stop watch was used to record the result. Two parallel lines were marked on the floor thirty feet apart. Two blackboard erasers were placed just behind one of the lines and the pupil started from behind the other line.

Students were instructed to start in any position desired. On the signal, "Ready! Go!," the student ran to the erasers, picked up one eraser, returned to the starting line where the eraser was placed on the floor. He then repeated this procedure by retrieving the second eraser and carrying it back across the starting line. The trial was disqualified if the erasers were thrown or dropped before returning to the starting line.

Two trials were permitted with the best time being recorded. The pupils were timed to the nearest tenth of a second from the "Go" signal until they crossed the starting or finishing line with the second eraser. The results of the shuttle run test are shown in Table V.

Both fall and spring test results in this event were very low. There were no individuals ranked in the excellent

category in the fall and only two ranked in the excellent group in the spring out of fifty-five boys. A total of 90.91 per cent placed in the lower two categories in the fall with 56.36 per cent ranking in the poor category.

TABLE V
RESULTS OF THE SHUTTLE RUN TEST

Classification	Fall		Spring	
	Number	Per cent	Number	Per cent
Excellent	0	0.00	2	3.64
Good	5	9.09	6	10.91
Satisfactory	19	34.55	12	21.82
Poor	31	56.36	35	63.63
Total	55	100.00	55	100.00
	Range	12.6-9.5 sec	Range	12.5-9.1 sec
	Mean	10.73 sec	Mean	10.79 sec

The spring testing showed negative results in this event. There was a total of 85.45 per cent falling in the lower two categories and the number of boys in the poor group increased from 56.36 per cent in the fall to 63.63 per cent in the spring. The mean score also fell from 10.73 seconds per boy in the fall to 10.79 seconds per boy in the spring. The mean score for both testings ranked the class in the poor category according to the norms of the Youth Fitness Test.

From this particular test it can be assumed that the speed and agility of the boys left much to be desired.

STANDING BROAD JUMP

This exercise was tested in the gymnasium where a tape measure was fastened to the floor with adhesive tape. The starting line was a piece of tape set perpendicular to the measuring line. Pupils were to stand with feet spread in a comfortable position and toes behind the starting line. Prior to the jump the pupil was allowed to swing his arms backward and forward and bend his knees in a rhythmic fashion. When the jump was made the arms were to swing forcefully forward and upward simultaneously with the taking off from the balls of the feet.

Each pupil was allowed three trials with the best trial being recorded. Measuring was done from the starting line to the place where the floor was touched nearest the starting line. Measurements were recorded to the nearest inch. The results of the standing broad jump test are shown in Table VI.

The freshman boys of Dickinson County Community High School ranked slightly below average in the standing broad jump as compared to the national norms. Only three boys ranked in the excellent group and three in the good category in the fall. These two groups consisted of only 10.9 per

cent of the fifty-five boys tested. The fall testing indicated that thirty-two boys, or 58.19 per cent, were below satisfactory. The results of the standing broad jump test in the fall showed a mean score of 5'11.6". This is considered a high poor rating according to the norms of the President's Council on Youth Fitness shown in Table I and II.

TABLE VI
RESULTS OF THE STANDING BROAD JUMP TEST

Classification	Fall		Spring	
	Number	Per cent	Number	Per cent
Excellent	3	5.45	4	7.27
Good	3	5.45	10	18.18
Satisfactory	17	30.91	14	25.45
Poor	32	58.19	27	49.10
Total	55	100.00	55	100.00
	Range	4'0"-7'6"	Range	4'4"-7'8"
	Mean	5'11.6"	Mean	6'1.6"

The mean score of the spring testing of the standing broad jump was two inches farther than the fall testing. The results of the spring testing of this event resulted in a mean score of 6'1.6" per boy. This mean score rated the class in the low satisfactory group according to the national norms. The percentage of students falling in the excellent and good categories increased from the first

testing to the second testing. This increase was from 10.9 per cent in the fall to 25.45 per cent in the spring. Even though there was a 9.09 per cent decrease in the percentage of boys falling in the poor category in the spring, 49.1 per cent of the fifty-five boys still remained in that group.

FIFTY YARD DASH

In this test the students started behind the starting line using any position desired. From behind the starting line they were started by a gun and each was timed from the gun signal until he crossed the fifty yard finish line. Time was recorded to the nearest tenth of a second. Results of the fifty yard dash are shown in Table VII.

TABLE VII
RESULTS OF THE FIFTY YARD DASH TEST

Classification	Fall		Spring	
	Number	Per cent	Number	Per cent
Excellent	0	0.00	1	1.82
Good	11	20.00	7	12.73
Satisfactory	15	27.27	16	29.09
Poor	29	52.73	31	56.36
Total	55	100.00	55	100.00
	Range	9.7-6.7 sec	Range	9.5-6.5 sec
	Mean	7.79 sec	Mean	7.58 sec

These test results were similar to that of the shuttle run. The students showed very little improvement from fall to spring. The lower areas of poor and satisfactory remained fairly constant with a change of one student being added to the satisfactory group and two students being added to the poor group during the spring.

No students ranked in the excellent area in the fall and only one ranked in that category in the spring. These results amounted to a definite poor showing for both the fall and spring testing. A possible factor for the poor showing in the shuttle run and the fifty yard dash could have been because a slight degree of natural speed is lost by a majority of boys during periods of rapid growth and weight gaining. This growth period was definitely noticeable with some of the freshman boys throughout the year.

SOFTBALL THROW

This test item was done on a football field with a regulation softball. Those being tested lined up in alphabetical order to take their turns. The thrower could not run up to the line before throwing. He had to throw from between chalk lines six feet apart. Only overhand throws were used.

Each pupil was given one practice throw and three trials. Each trial was marked with a metal stake. If the

first throw was the better of the three, the stake remained where it was. If the second or third throws were better than the first, the stake was moved to the new mark. After each pupil had thrown three times his stake was measured from the throwing line. Measuring was done to the nearest foot. Results of the softball throw are shown in Table VIII.

TABLE VIII
RESULTS OF THE SOFTBALL THROW TEST

Classification	Fall		Spring	
	Number	Per cent	Number	Per cent
Excellent	1	1.82	2	3.64
Good	6	10.91	10	18.18
Satisfactory	13	23.64	11	20.00
Poor	35	63.63	32	58.18
Total	55	100.00	55	100.00
	Range	67' - 206'	Range	76' - 205'
	Mean	131.59'	Mean	138.5'

Test results on this item were below average. In the fall there was only one boy who threw the softball further than 190 feet to place in the excellent group. Only six boys out of fifty-five rated good with 87.27 per cent falling in the lower categories of satisfactory and poor. The poor group accounted for 63.63 per cent of the boys in the fall. The range was from 67 feet to 206 feet

with the class mean for the fall at 131.59 feet per boy.

The spring testing showed only a slight improvement over the fall. In the spring there were two boys in the excellent group and ten boys in the good category. A percentage of 58.18 still remained in the poor grouping in the spring. The range in the spring was from 76 feet to 205 feet and the mean score being 138.5 feet per boy, an increase of 6.91 feet per throw. It would have to be concluded that the freshman boys at Dickinson County Community High School ranked poorly in the softball test according to the national norms.

600 YARD RUN-WALK

The last item of the test was given on a 440 yard track. A 600 yard distance was marked off around the quarter-mile track for this event. The pupils ran in small groups with each pupil's time being called out individually as he crossed the finish line. A partner was assigned to each runner to remember his time.

Participants started on the signal, "Ready! Go!" The object was to cover the 600 yard distance in the shortest time possible. Walking was permitted but discouraged. At the end of each heat of the race, the time was recorded in minutes and seconds. The results of the 600 yard run-walk are shown in Table IX.

TABLE IX
RESULTS OF THE 600 YARD RUN-WALK TEST

Classification	Fall		Spring		
	Number	Per cent	Number	Per cent	
Excellent	3	5.45	25	45.46	
Good	21	38.18	20	36.36	
Satisfactory	16	29.09	5	9.09	
Poor	15	27.28	5	9.09	
Total	55	100.00	55	100.00	
Range	3:07 - 1:39 min		Range	2:34 - 1:28 min	
Mean	2:10.5 min		Mean	1:54 min	

The freshman boys of Dickinson County Community High School ranked the highest in the 600 yard run-walk event of any event tested. They ranked above average according to the national norms. In the fall the mean score was two minutes ten and five tenths seconds. Only three boys ranked in the excellent group in the fall but twenty-one rated good. The number classified as satisfactory and poor was 16 and 15 respectively, as shown in Table IX.

There was a surprisingly high improvement in the results of the boys in the spring. The number ranked in the excellent group had increased from three to twenty-five. The number rating in the good category remained almost the same with only one less than in the fall. There was a decrease from fifteen boys to five boys in the poor

category in the spring. Only 9.09 per cent of the boys still ranked in the poor category at the end of the year.

The mean score improved by 16.5 seconds per boy in the spring. In relation to the mean score, the boys ranked in the high good group according to the President's Council On Youth Fitness.

SUMMARY

The freshman boys at Dickinson County Community High School showed an improvement in all but one event on the President's Youth Council Physical Fitness Test during the course of the school year 1963-64. The students improved much more in some events than others.

The students at Dickinson County Community High School improved from 4.28 pullups to 4.57 pullups per boy during the school year. This mean score was high enough to rate the class as an average in the satisfactory grouping according to the national norms established for pullups.

The situp test showed the next to the highest performance of all events tested. An increase of 18.27 situps per boy is indicated in Table X. According to the national norms the over-all rating of the students increased from the satisfactory to the good group in situps from the first testing to the last.

The boys in shuttle run showed the poorest results

in all events tested. This was also the only event in which the class as an average did not improve from fall to spring. The average time decreased .06 seconds in the shuttle run from the fall testing to the spring testing. During the school year the average time increased from 10.73 seconds to 10.79 seconds. The average time established by the boys placed at the high end of the poor category according to the national norms and remained there for both fall and spring testing.

TABLE X
AVERAGE SCORE AND IMPROVEMENT OF EACH EVENT

Activity	Fall	Spring	Improvement
Pullups	4.28	4.57	.29
Situps	55.55	73.82	18.27
Shuttle Run	10.73 sec	10.79 sec	-.06 sec
Standing Broad Jump	5'11.6"	6'1.6"	2"
Fifty Yard Dash	7.79 sec	7.58 sec	.21 sec
Softball Throw	131.59'	138.5'	6.91'
600 Yard Run-Walk	2:10.5 min	1:54 min	16.5 sec

The mean distance jumped by the students in the standing broad jump was 5 feet 11.6 inches in the fall. An improvement of 2 inches was indicated in Table X in the

spring testing. This 2 inch improvement raised the class as an average from the high end of the poor group in the fall to the satisfactory category in the spring according to the national norms.

The boys in the fifty-yard dash showed next to the poorest results of all events tested. Table X indicates a mean score of 7.79 seconds in the fall. The improvement of the mean score was only .21 seconds in the spring testing. According to the national norms the class as an average ranked in the poor category for both fall and spring testing.

The students ranked below average according to the national norms for the softball throw. The class as an average increased the distance of the softball throw from 131.59 feet in the fall to 138.5 feet in the spring. Even with this increase in distance the mean score of the boys remained in the poor grouping category in the spring according to the national norms established for the softball throw.

The 600 yard run-walk event showed the highest ranking and most improvement of any event tested. The boys decreased their running time in this event from 2 minutes 10.5 seconds to 1 minute 54 seconds, a 16.5 second decrease for each boy. The students placed in the satisfactory group in the fall with the spring improvement raising their

ranking to a high good. Actually the mean score of 1 minute 54 seconds placed the class relatively close to the excellent category in the spring according to the national norms.

CONCLUSIONS

When the National Youth Fitness Test was given to 1963-64 freshman boys at Dickinson County Community High School, the students as a whole were below average in the fall. Granted, on certain test items the boys were above average, but in taking the test as a whole the boys did poorly in the fall. In the fall testing the boys rated satisfactory in pullups, situps and the 600 yard run-walk. However, they rated poor in the shuttle run, fifty-yard dash, standing broad jump, and the softball throw. Situps and the 600 yard run-walk showed the best results in both fall and spring testing.

There was improvement in all items but the shuttle run in the spring. The areas consisting of pullups, situps, standing broad jump and the 600 yard run-walk were average or above in the spring testing. The shuttle run, fifty-yard dash and the softball throw were categories that still remained below average in the spring testing, however two of these items did show an improvement from fall testing.

From this study, the mean scores of the pullup test

item did indicate that the students were in the satisfactory category. Even though the mean score did rate satisfactory there were still nine boys in the spring that were unable to do a single pullup. In the same token, the softball throw indicated that the boys were below average in this item in both the fall and spring testing. This fact points out a need for more upper body activities such as wrestling, tumbling, rope climbing, and activities on the parallel bars which would contribute toward strengthening the arms and shoulders.

Apparent weakness of leg power and endurance was evident from the test results, particularly the poor rating in the standing broad jump in the fall and its low satisfactory rating in the spring as well as the poor ratings in the shuttle run and fifty-yard dash for both fall and spring testing. The explosive power muscles of the legs were affected in these events. Steps to improve this area should include more activities which require agility, endurance, and speed such as soccer, speedball, basketball and agility drills where leg usage is essential.

Ratings of a high degree were obtained in the tests of situps and the 600 yard run-walk. These high ratings show sufficient strength in the abdominal muscles and hip flexors, endurance of the legs and above average functioning of the cardio-respiratory system.

After administering the test in the fall and spring semesters, it was noted that some test areas rated above average but some also rated below average according to the national norms. Considerable improvement needs to be made and could be made in several items.

This objective of improvement should always be one concern of the physical education teacher. Some type of testing for physical fitness with established norms as used in this study should always be a regular part of any program. Thus, a comparative study can be made of the results, and recommended changes or adjustments in the physical education programs of activities can be made on the basis of the fitness needs of the students.

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A STUDY OF PHYSICAL FITNESS TESTS GIVEN TO
FRESHMAN BOYS AT DICKINSON COUNTY
COMMUNITY HIGH SCHOOL, 1963-64

by

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B. S., Kansas State University, 1964

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Physical Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1965

As educators, we are all concerned with each individual's physical, mental, social and moral well-being. One region of primary importance is the physical aspect of the individual. If the physical fitness of the person is neglected and all other areas are developed, the person's contributions to society are lost. The mind cannot perform at its peak capacity unless the body cooperates.

This problem of physical fitness was strongly heard with the large number of draftees being rejected during World War II and the Korean Conflict and with the Kraus-Weber test indicating a great difference in the fitness of the European and American Youth.

It was in response to this problem that President Eisenhower in 1956, established the President's Council on Youth Fitness which was continued by the late President Kennedy, and is being continued by President Johnson. Tests have been given over the nation and from these tests national norms were constructed.

It is hoped that the information in this report will be of value in the planning of the physical education at Dickinson County Community High School. The test was administered to all fifty-five boys enrolled in the 1963-64 freshman class. The test was administered twice, once in September and again in May. The testing program included all events in the National Youth Fitness Test.

The results of the pullup test indicated that the class standing was satisfactory on the national scale.

The strength and endurance of the abdominal muscles of the boys was above average according to national norms. During the course of the year the boys performed an increase of 18.27 situps per boy.

The shuttle run test was used to test speed, coordination, and agility. This was the only event where the boys did not improve. The students rated poor in this test.

The boys rated poor in the standing broad jump test in the fall but by spring, improvement was sufficient for a satisfactory rating.

The speed of the boys tested in the 50 yard dash was rated poor both in the fall and spring. The class had a mean score of 7.58 seconds.

Another event which indicated a lack of fitness was the softball throw. With a mean improvement of almost 7 feet, the boys still ranked poorly in the spring.

A test item with great improvement was the 600 yard run-walk. The boys ranked above average in this event. Of the fifty-five boys tested the mean score was 1 minute 54 seconds in the spring, a 16.5 second decrease in time from that in the fall.

All in all, it is assumed that the boys of Dickinson County Community High School freshman class as a whole

ranked about average. There was improvement in the spring in all items but one. There needs to be more emphasis put on wrestling, tumbling, rope climbing and the running games of soccer, speedball and basketball. These activities would tend to improve the arm strength, speed and agility of the boys.

The test should certainly be continued year after year to verify the physical education program, as well as the physical fitness of all students.