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A Comparison in Scholastic Attainment of the Athlete and Non-Athlete at Edmonds Junior High

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A COMPARISON IN SCHOLASTIC ATTAINMENT OF THE
ATHLETE AND NON-ATHLETE AT
EDMONDS JUNIOR HIGH

A Thesis
Presented to
the Graduate Faculty
Central Washington College of Education

In Partial Fulfillment
of the Requirements for the Degree
Master of Education

by
Kenneth Edward Sturm
August 1961

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

This study was an attempt to shed more light on scholastic attainment of athletes in the junior high school. The purpose was not to justify the inclusion or exclusion of interscholastic sports in the junior high school, only to determine what effect these sports have on an individual's grades. Some individuals feel that participation in athletics tends to lower the grade-point average of the participants.

Cormany states that, "Organized interscholastic athletics are no doubt the most highly advertised of all extra-curriculum activities" (4:456). Considerable time and energy is given by the students involved in interscholastic athletics. Some believe that the student participates at the expense of scholastic success; however, the rich experiences gained from participation compensates for what is lost in scholarship. Everett S. Dean states:

Athletics must be an educational experience to boys. As education is to our democracy so is athletics to education. Some of the educational values that coaches attempt to teach are: (1) Social, emotional, personality, mental and moral adjustments. (2) Leadership, fellowship qualities. (3) Respect for authority. (4) Development of good health habits. (5) Good citizenship. (6) Sportsmanship, or the Golden Rule. (7) Team play--work and play with others. (8) That with right goes responsibility (5:7).

A football training manual published by the United States Naval Institute contains this passage:

Football is, and has been, a definite factor in the development of such qualities as self-discipline, intelligence, resourcefulness, self-reliance and will to win--both in the individual and in cooperative effort (23:6).

I. STATEMENT OF THE PROBLEM

It was the purpose of this study to determine whether athletes in the junior high school have equal, lower, or higher grades than non-athletes. An attempt was made to answer the following questions:

- A. Do athletes receive higher grades than non-athletes?
- B. Do the grades of an athlete go up or down while he is participating in a sport?
- C. Does participation in intramural sports have a bearing upon the grades of an individual?
- D. Are certain sports more conducive to good grades than others?
- E. Does participation in more than one sport affect an individual's grades?

II. DEFINITIONS OF TERMS USED

Athlete. This is a student who at some time during his junior high career turned out for a sport the complete season.

Participation. For use in this paper, participation means turning out for a sport whether or not a varsity

letter was received.

Non-athlete. This is a student who does not participate in any organized school athletic program.

Intramurals. This is the program held within the school not, however, during school hours. The program excludes varsity members and includes the sports of touch football, basketball, and softball.

Length of season. The definition used for this word is the time of year when a sport is under the coach's supervision and is actively held interscholastically.

Grade-point average. This average is computed by assigning four points to an "A," three points to a "B," two points to a "C," one point to a "D," and no points for an "F." The letter grades are multiplied by the corresponding points and the sum is divided by the total number of grades. In this study the grade-point averages were computed by the quarter and the semester.

III. IMPORTANCE OF THE STUDY

Practically all schools have some athletics; therefore, this study attempted (1) to determine if athletics and intelligence have an interrelationship, (2) to determine if participation in a sport is a factor to consider

in counseling the student, and (3) to determine if participation in a sport has a bearing upon grades received by an individual.

CHAPTER II

REVIEW OF LITERATURE

I. ATHLETICS

A number of studies have been done on the scholastic achievement of athletes on the high school and college level. There has never been, to the author's knowledge, a study done in this area on the junior high level. It should be noted that the major studies were done in the early 1930's and very little in this field has been done recently.

In a discussion of athletics, a distinction must be made between college, high school, and junior high school. The first two are placing more and more emphasis on having winning teams. This emphasis has led to such negative feelings as this, from an English teacher, "I had to give a student a passing grade or else; he's the star player and we would lose without him. If I didn't give the grade, I would surely be ostracized." Another comment quite common is, "The coaches are keeping him in school only as long as he has eligibility years left. If it weren't for the coach he'd be out in a second." Still another comment is, "If the athletes didn't take easy courses they couldn't pass." Perhaps one can dispense with such comments due to lack of empirical evidence.

In the junior high school there is only limited

opportunity for students to select specific areas of study. All students (athletes and non-athletes) are required to take a specified course of study. This requirement to an extent eliminates the procedure referred to as "sliding through on easy courses." Another major factor which differentiates between levels is that there is little or no emphasis placed on winning. The student may participate if he wishes, but he must meet academic standards. Finally, the teachers have less pressure to give athletes passing grades since there is little emphasis on winning.

A study done by Tom Connor at Alexandria, Minnesota, in 1954, was designed to determine the scholastic achievement and mental ability of athletes and non-athletes on the high school level. Seven hundred and seventy-four students were involved, and the study was carried on for five years (1950-1954). Included in this number were 74 seniors who lettered in the school's sports. The testing media were scholastic grades and an intelligence test (the test title was not given). The findings of the study tended to favor the athlete. In every year except 1952 the lettermen scored higher than the non-athlete scholastically; the greatest superiority was recorded in 1954. The mean for the athlete was 2.68 as compared to the class mean of 2.49 and the non-athlete mean of 2.46. The difference in native ability was negligible. One interesting factor that Connor

found was the position that specific sports held in relationship to the grades of the participants. The sports ranked in the following order: golf, basketball, track, football, and baseball. He also found that students who participate in three sports are more likely to achieve higher scholastic grades than two-sport or one-sport athletes. The general inference that Connor states is, "Participation in athletic activities does not have adverse effect on the scholastic success" (2:56-7). Perhaps he could have been more positive and stated that athletic activities have a beneficial effect.

Some educators feel that many studies done in the area of athletes' grades do not exhibit any degree of accuracy because all the grades are averaged together, including the so called "easy subjects." A study done by Roy Pangle in 1951-1955 was designed to eliminate this problem. The criterion of measurement was the student's final grade-point average; however, no mark in physical education was included in the final average. This procedure supposedly represented an unbiased measurement of achievement in the academic areas. The total group analyzed consisted of 111 boys, 42 lettermen and 59 non-participants in either of the two sports played at the school (football and basketball). The results showed a central tendency (mean) to be 82.71 for the participants, for the non-participants,

83.25. The standard deviations were 4.77 and 4.57 respectively (14:360-5). The findings indicate that even with the elimination of the athlete's most capable subject, he is still able to compete scholastically with the non-athlete. The real significance of the study lies, not in a statistical attempt to vindicate the high school athlete, but rather in thinking of the result in terms of the ever increasing "mis-emphasis" given to most programs of interscholastic athletics. When one considers the numerous and sometimes extended daily practice periods, the prolonged and excessive length of playing season, and the tendency to completely disregard the educational aspects of athletics, it is both significant and surprising to learn that scholarship attainment is seemingly a virtue of the athlete and the non-athlete alike (14:360-4).

Another study in the area of subjects elected by the athlete was done by William Cook and Mabel Thompson in 1926. One hundred boys who had been awarded letters in one or more of the following sports (football, basketball, track, swimming, and tennis) were compared to 109 non-lettermen. The criterion of evaluation was the weighting of each subject according to credit and then figuring the annual averages. The distribution is seen on Table I. One can surmise by this table that the athlete and the non-athlete in this high school take very similar fields

TABLE I
HIGH SCHOOL COURSES IN WHICH 100 LETTER BOYS AND
109 NON-LETTER BOYS WERE ENROLLED

Courses	Letter boys	Non-letter boys
General	75	78
Industrial	15	17
Commerical	10	12
Music	0	1
Special	0	1
Total	100	109

of study; however, one cannot empirically say that this is true for all schools. Cook and Thompson also continued their study further in an attempt to find a relationship between specific branches of athletics and individual scholarship. According to general scholarship, the sports ranked in this order: track, tennis, basketball, baseball, football, and swimming. These results showed a minimum correlation to the study done by Connor. Cook and Thompson included another area in their study, a follow-up study on what group was more likely to enroll in college. The findings were negligible; 62 letter boys enrolled in college as compared to 63 non-letter boys.

Certain physical educators have contended that mental and motor development tend to have a correlation. Howard Ray conducted a study to find if there was a correlation in the inter-relationships of physical and mental abilities and achievement of high school boys. The 432 boys involved had from one to four years each in school attendance. The Terman Group Test was used to determine the intelligence quotient; the grades and a citizenship scale used as other testing media. In an attempt to provide greater reliability, only the senior records were used. The findings tended to favor the athlete in all areas. The significant area was in scholastic grades where the non-athlete scored 5 per cent below the athlete.

The athletes also rated higher in citizenship and leadership. Ray compared the athlete group to the students who worked after school and found that even though they had equal mental ability, the students who worked after school were 8 per cent lower than the athlete in scholastic success. Both in citizenship and leadership, the ratings of the athlete were higher. While compiling the statistical data, Ray included anthropometric measurements of the entire group. He found that the athlete grew faster and was less prone to extreme variations in weight (16:133).

A possible solution to the problem of more accurately determining the athlete's scholastic attainment would be to administer objective tests. Such a study was done by W.J.B. Gormany in Raleigh County, West Virginia, in 1933-34. The study involved five different high schools and included approximately 600 students. The objective tests were directed to test their "core program" which consisted of English, biology, and American history. The Otis Self-Administering Tests of Mental Ability were given to all students in grades ten through twelve. Utilizing the scores on this test, the students were placed in one of four groups. The following achievement tests were then administered: the Columbia Research Bureau American History Test, the Russ-Cossmann Biology Test, and the Columbia Research Bureau English Test. The results favored the athlete in every group although, in

the comparison of the more favorable athlete to the more favorable non-athlete, there was only a slight difference. However, even with almost negligible results, Cormany's observation is appropriate here, "The non-participant is actually the loser. Why! Because he the athlete is getting equal knowledge, but gaining a great deal from the chance to participate" (4:456-61).

A study done by Roland Jones was designed to find the placement of athletes on an intelligence scale. The study included 493 non-athletes and 80 athletes. The Illinois General Intelligence Scale, Form I, was used as the determining criterion. Based on the results of this test, Jones iterated these conclusions: (1) high school athletes are more intelligent than non-athletes, (2) there is a smaller number of athletes in the lower intelligence level, (3) a large per cent of athletes are in the higher levels of intelligence, and (4) in the very superior and near genius group the percentage of athletes and non-athletes is the same (12:415-16). Jones' study was somewhat similar to the one conducted by F.H. Finch; however, Finch used five group tests as his measuring criteria instead of one. Finch concluded from his findings that boys with high intelligence have a tendency to engage in interscholastic athletics. One conclusion from his study tended to repudiate the findings by Cook

and Connor. Finch suggested that no one sport is superior in the achievement of grades, which was just opposite the opinion of Cook and Connor.

How do athletes rate in their verbal and psychological abilities? Occasionally an athlete will excel only in sports, and he will appear to "murder" the English language at every opportunity. One cannot say that poor English and athletics are synonymous; J.R. Shannon conducted a study to prove this point. He used the Psychological Education Examination of the American Council of Education and the Teachers College Psychological Examination to determine intelligence and for ability grouping. To determine English ability in the matched groups, he administered the Barrett-Ryan English Test and the Iowa Placement Tests. The findings of the tests led to two general conclusions: (1) the athlete did better in English in spite of lower intelligence quotient, and (2) the athlete was lower in mental ability (18:128-30).

One method of determining an accurate correlation is by using as many criteria as possible for the determinates. In essence, John Jacobsen did this in 1931. He compiled the data up to his time on studies made concerning the intelligence and grades of athletes.

There was a total of seventeen different studies in his review. Jacobsen gave the authors' conclusions as follows:

1. Cline, in 1910, at Sidney High School, Sidney, Nebraska, concluded that during participation monthly failures reduced from sixty to twenty-one in scholarship and from sixteen to two in deportment.
2. Power, in 1931, surveyed twenty California high schools (a survey on the instructors' opinions), tabulating the returns, found that sixty to ninety per cent believed athletics detrimental to intellectual effort, scholarship, memory, concentration, reasoning, and will power. Most believed morals, ideals, and restraint are aided by the participation in athletics.
3. Hilderbrandt, in 1917, at Harver, Illinois, utilizing one-hundred girls as the test sample, found that the fifty girls who stood highest in physical training were definitely higher in academic scholarship as compared to the fifty who stood lowest; this difference was imputed to physical training.
4. La Rue, in 1917, at St. Louis, Michigan,

studying fifteen athletes, revealed that eleven of the fifteen athletes had higher scholarship records than the average non-athlete.

5. Rogers, in 1922 at an unnamed California high school working with the records of twenty students, found that all pupils were 4.45 points below the athlete in scholarship records, and the athletes were also higher than those of equal mental ability.
6. Lantz, in 1922, at Turtle Creek, Pennsylvania, with an undisclosed number of subjects, discovered that athletic leaders were also leaders in other activities. The average score on intelligence tests of athletes was 113 and of the non-athlete, 102.
7. In 1923 at Madison, Wisconsin, Riebe (utilizing a survey questionnaire) said that of two hundred returns, 80 per cent believed scholarship suffered during athletic participation, but actual study of records revealed no relation between low scholarship and athletic participation.
8. In 1924, Swanson, at Kansas City, Missouri, used a sample of two hundred and thirty-

nine girls, and one hundred and fifty-nine boys. Two hundred and forty-three of the previous totals were participants in extra-curriculum activities; of whom, thirty-nine (twenty-two boys and seventeen girls) were slightly better scholars than non-participants. Participation in extra-curriculum activities did not effect scholarship.

9. Lindel, in 1924, at Minneapolis, Minnesota, with an undisclosed large number, found that scholarship records of athletes were higher during participation than those of non-athletes. The best athletes were higher than their teammates in scholarship.
10. In 1924, at Sullivan, Indiana, Hull, using a sample eighty-two boys and fifty-two girls (of whom one-half were athletes), suggested that athletes were slightly lower in scholarship than non-athletes. Grades were higher before and after the season of participation; the results were about the same for girls.
11. Keene, in 1925, at Harrisburg Academy, Harrisburg, Pennsylvania, found that athletes surpassed non-athletes in scholarship.

12. In 1926, a writer from the Lincoln School of Teachers College, Columbia University, testing a sample of sixty-three boys and fifty girls, of whom eight boys and eight girls were athletic captains, found athletes slightly older, lower in intelligence, higher in scholarship, were taller, more extroverted, more proficient in physical activities than all pupils.
13. Beu, in 1926, utilizing a group of Illinois high schools and a sample of 1,060 students (530 athletes and 530 non-athletes), concluded from the results of the study that athletes were of slightly higher intelligence than the non-athletes and were about the same in scholarship. Athletes were .12 of a year younger than non-athletes.
14. In 1926, at Coldwater, Michigan, King, testing an undisclosed number of students, found that athletes received more A's and B's than non-athletes and also received more D's. The choice of courses was similar for both groups. Athletics seemed beneficial rather than harmful.
15. Hall, in 1928, using a sampling from four Colorado high schools, iterated that boy

athletes were lower in intelligence and in scholarship than non-athletes and were about one-half year older. Girl athletes were slightly higher in intelligence quotient; however, girls were about two months younger than non-athletes.

16. A study by Cook and Thompson has been previously reported in this paper.
17. Monroe, in 1929, at Kenosha, Wisconsin, using a group of 529, found that both in intelligence and scholarship athletes were lower than participants in other curriculum activities but equal to non-participants. Actual participation did not lower marks either for athletes or for other participants; hence, it seems that participation acted as an incentive to live up to the promise.

Out of the seventeen studies, ten investigators found that during participation on or off season the athlete did as well or better than the non-athlete. Four found that there was no visible differences, and only three agreed that athletic participation was detrimental to scholarship. It is interesting to note that two out of the three studies that revealed negative results were done using the questionnaire method of research. This

suggests that the problem of low scholastic attainment of athletes tends to be more opinion than fact. In summary, Jacobsen suggested these over-all conclusions: (1) high school athletes are of average ability, (2) athletes are as high or higher than non-athletes in school marks, and (3) scholarship does not seem to suffer during participation (10:280-7).

One could conjecture from the previous cited studies that all studies conducted have favored the athlete; this is not true. Reals and Reess examined the records of 888 boys in St. Louis, Missouri, and found negative results. Reals and Reess for their evaluating criteria used the student's average marks, intelligence quotient--derived from the Terman Group Test, chronological age, and scores obtained by administering the Sones-Harry High School Achievement Test. The results inferred that the non-athlete had a higher intelligence quotient. One additional factor which the study did disclose was that track athletes are significantly higher in intelligence than participants in other sports; the lowest was baseball. These results had a high agreement with the findings of Connor.

II. INTRAMURALS

How valuable are intramural sports? Certain physical educators believe that the over-all objectives of the program are very worthwhile. Elmer D. Mitchell states, "The objectives of the intramural program are recreation, social contacts, group spirit, better health, permanent interest in sports, development of varsity material, bodily prowess, and scholarship" (13:22).

Specific studies have been done to determine the scholastic success of intramural participants. At the University of Oregon Paul R. Washke, in 1931-1936, examined the records of 542 students (271 non-intramural participants and 271 participants), and found the average grade-point average of the participants to be above that of the non-participant in every year except one (22:22-27). A similar study at the University of Kentucky by Miller and Hackensmith provided parallel conclusions; however, the latter study found a very distinct advantage in grades for junior and senior year participants (9:94-99). Rarick's study at the University of Wichita in 1941 found no difference in the grades of participants and non-participants in the intramural program. On the other hand, Rarick found that out of the fifty fraternities included in the program, the

winning fraternities in intramural activities scored among the higher scholastically-rated fraternities (15:114-8).

Studies have been done on the college level to find the scholastic attainment of athletes; because many different variables influencing the results could and do distort the findings, the studies will not be mentioned in this paper.

III LIMITATIONS OF PREVIOUS STUDIES

The consensus of most studies is that the athlete does as well or better than the non-athlete in all aspects of schooling. Due to the fact that many studies did not provide a true measurement, one can only conjecture about the findings. Variables which distorted the studies up to this time are as follows: (1) including physical education grades in the averaging of grades, (2) using only teachers' marks, (3) limited numbers studied, (4) using subjective opinions as a substitute for empirically needed data, (5) failure to utilize a control group, (6) studying only boys who had been awarded a letter (actual participation was ignored), and (7) the failure to treat the results statistically.

CHAPTER III

PROCEDURES

The facts and data used in the study were obtained from the following sources: (1) grades from the students' report cards, (2) intelligence quotient scores from the students' records, and (3) information from the coaches of football, basketball, baseball, track, and tennis.

The grade-point averages were tabulated at the end of each quarter and each semester. It was thought by tabulating the grades one quarter at a time, a higher degree of accuracy could be obtained. If a grade was not recorded for a specific subject due to some problem such as owing a fine or for a disciplinary reason, one could contact the teacher involved and thereby complete the students' report cards.

In computing the grade-point averages, all subjects were included with the exception of a health-physical education grade. This was one grade, a composite of health and physical education. The grade was deleted because the athlete scored on the average at least one grade higher than the non-athlete, as shown in Table II. To obtain a true measurement of scholastic achievement, therefore, the health-physical education grade was not included. It was also thought that when one eliminates the subject in which the athlete is superior, he should also eliminate such

TABLE II
 GRADES RECEIVED BY THE ATHLETE AND THE NON-ATHLETE
 IN HEALTH AND PHYSICAL EDUCATION*

Grades	Athlete	Non-Athlete
A's	18	4
B's	64	32
C's	14	50
D's	4	8
F's	0	4
	Mean 3.0	2.1

*These grades are for students actually involved in the study. The grades are from the two semesters.

classes as music or foreign languages from the averages. However, due to the fact that all boys are required to take physical education in the ninth grade and the class requires no outside preparation, it was excluded. In contrast, other courses such as a foreign language are on an elected basis and do require extensive outside preparation. These courses were not dropped from the averages. The following courses are requirements for all ninth-grade students: English, Washington State history, general mathematics or algebra, biology or general science, and physical education and health. A student must elect two courses from the following electives: woodshop, arts and crafts, foreign language, and music (vocal or instrumental).

The students' records contained two separate intelligence quotient scores. The California Test of Mental Maturity, Form S, was used in both testing instances. The first test was given the students in September, 1956, and the second test was given October, 1959. To derive a mean intelligence quotient score, the two test scores were added and then divided by two. This gave an average for the two tests taken. If a student had only one score or there was a variance of twelve points or more (by a careful check of the scores this appeared to be the largest variation that could be accurately used), the in-

dividual was not included in the study. A total of 27 students were not included in the study for the above reasons. A total of 99 students were in the final study, 50 students in the athlete category and 49 in the non-athlete group.

Information from coaches consisted of names of boys that participated in their respective sports. It should be recalled that a student did not have to earn a varsity letter to be included in the athlete group although he had to be a member of the team for the complete season. If a student had to drop because of an injury, he was included in the athlete group. This was true of two students.

The first major step after acquiring the grades and the intelligence quotient scores was to separate the athletes from the non-athletes. This was done at the end of the 1960 school year by using lists submitted by the coaches. These two groups were further separated into four native intelligence groups. The criteria for their separation was their intelligence quotient scores. The four groups were as follows: (1) 70-89, (2) 90-105, (3) 106-119, and (4) 120-128. These groups were set arbitrarily in order to include a fairly equal number of students in each of the two separate categories (athlete and non-athlete). These four groups represented equal ability grouping.

The computing of grade-point averages was accomplished after determining the ability groups. A mean grade-point and mean intelligence quotient was then further obtained for each group. A comparison at this point was to determine whether students who participated in athletics actually did better scholastically than did non-participants on the same ability level.

Further comparison was done to determine whether one sport is more conducive to better grades than the others. The athletes were separated into the respective sports in which they participated. A mean for each group was tabulated to determine what sports tended to attract the more intelligent student. If a student participated in more than one sport, he was included in each group when the means were computed. A follow-up of this section of the study, by computing the grades and intelligence quotient of the one-sport, two-sport, and three-sport athletes, found whether participation in more than one sport has any relationship to grades received by the athlete.

The study was originally designed to include intramural participation as one of the phases. Only 10 students of the 49 non-athletes were actually participating in the intramural program. This in itself is a very significant fact; however, it is even more significant

when one considers the total number of students that actually participated in the program. One-hundred and forty-three students were involved in intramurals--30 for football, 60 for basketball, and 53 for softball. Some of the students, of course, participated in more than one intramural activity. Because of the limited number that were non-athletes, this area could not provide sufficient data and was therefore excluded from the study.

The remaining area of the study--do academic grades improve or go down while participating in a sport--was determined by listing the participants and their quarter grade-point averages. There was a specific list for each sport. The football participants' grades were compared using the fall quarter (September-November) and winter quarter (November-January). The basketball players utilized the first semester grade and the third quarter grades (January-March). The sports of tennis, baseball, and track used the third-quarter grades (January-March) and the fourth-quarter grades (March-June). The final totaling of each sport gave a percentage score--the per cent that had no change, the per cent that had an improvement, and the per cent that went down.

In summary, acquiring data for the study consisted of reviewing the students' records and computing grade-point averages at the end of each school quarter. Coaches

had to submit lists of the members of teams that were utilized in answering specific questions.

CHAPTER IV

ANALYSIS OF DATA AND CONCLUSIONS

I. ANALYSIS OF DATA

The purpose of this study was not to determine the value of athletics in the school program but to provide empirical evidence as to the scholastic attainment of the athlete and non-athlete. There are many misconceptions as to the learning acquired from athletics. Individuals who state the athlete is more of an educational problem than the non-athlete do so only subjectively.

One has to remember that the athlete spends, on the average, two hours a day going, coming, and actually participating in his sport. Some definitely contend that these hours are completely lost, that no learning or studying is taking place. Conversely, many feel this time is not wasted due to the many learning experiences sports provide. It is quite surprising that with less time for studying, the athlete is able to do better scholastically than the non-athlete.

Comparing the athlete and the non-athlete in native-ability groups (Table III), one finds that the athlete does as well or better in all instances when compared with students in his native-ability group.

TABLE III

COMPARISON OF ATHLETES' AND NON-ATHLETES'
INTELLIGENCE QUOTIENT AND SCHOLASTIC
ACHIEVEMENT IN MATCHED
ABILITY GROUPS

I.Q.	70-89		90-105		107-116		120-128	
	Ath.	N-Ath.	Ath.	N-Ath.	Ath.	N-Ath.	Ath.	N-Ath.
M.I.Q. ¹	83.1	84.14	97.36	97.14	111.2	110.5	122.2	123.4
M.G.P.A. ²	1.56	1.44	1.86	1.67	2.34	1.89	2.92	2.63
Number of Students	9	7	19	15	17	20	5	7
Totals	Athlete				Non-Athlete			
M.I.Q.	102.02				104.49			
M.G.P.A.	2.07				1.84			

¹Mean intelligence quotient

²Mean grade-point average

This presents four implications: (1) the athlete must be making better use of his time, (2) the athlete is acquiring a better understanding of human relations through participation, (3) the non-athlete is definitely not working up to his capacity, and (4) the athlete because of better physical condition is more able to work to his full potential. I believe a general statement of fact is appropriate at this time. The athlete, although lower in his ability grouping, achieves a greater degree of learning than the non-athlete, despite having less time to study.

It would seem that during the season of participation as athlete's grades would go down because of the time element and the loss of energy due to participation in the sport. In this study this was true of football and track (Table IV). The remaining sports tend to remain the same. One could surmise that the time of year when a sport is held has some bearing on the variability in grade-point averages. Reviewing the grade-point averages of all students revealed a slight tendency for all students to do better the middle two quarters of the year. The reason for this may be one of three: (1) the tendency for teachers to grade lower the first quarter of the year, (2) the unfavorable weather in the winter which gives the student less time outside and more time to study, and (3) the general lackadaisical attitude that many boys

TABLE IV
 COMPARISON OF THE MEAN INTELLIGENCE QUOTIENTS
 AND GRADE-POINT AVERAGES OF THE
 SPECIFIC SPORTS

Sport	G.P.A. ¹	Avg. while participating	M.I.Q.	Number of participants
Basketball	2.34 ²	2.20	106.29	17
Football	2.21	1.87	101.20	37
Tennis	2.20	2.20	109.10	7
Baseball	2.16	2.24	100.80	9
Track	2.01	1.91	94.00	17
Non-athlete	1.84		104.49	49

¹The season of participation is included in this average.

²All numbers are rounded off to the nearest hundredth.

seem to acquire in the spring. However, it is interesting to note that even with a slight drop of the grade-point average during participation, athletes in all sports still remain higher in mean grade-point average than non-athletes (Table IV). This definitely means that participation does not hinder the scholastic accomplishments of the athlete. Most athletes have little variation before, during, or after participation in a sport (Table V).

Some sports attract the more intelligent athlete. The sports rank in the following order: tennis, basketball, football, baseball, and track (refer to Table IV). A point of clarification is needed here. If one adds the mean intelligence quotient for the respective sports, there is a higher grade-point average than given on Table III. This is true because in Table III an athlete is included only once, but in Table IV he may be added as many as three times depending on the number of sports in which he partakes. It is interesting to note that basketball players--ranking only second in I.Q.--have the highest grade-point averages. This agrees with the generalization stated earlier that students do better during the winter months.

The number of sports in which a boy participates has a direct relationship to his native ability and scholastic success (Table V). The three-sport athletes, even

TABLE V
 PERCENTAGE OF ATHLETES THAT HAD AN IMPROVEMENT, A
 LOWERING, OR NO CHANGE IN THEIR GRADES, AFTER
 OR BEFORE THE SEASON OF COMPETITION

Sport	Increase	Decrease	No Change
Football ¹	68	22	10
Basketball ²	29	29	42
Tennis ³	72	14	14
Track ³	42	29	29
Baseball ³	44	33	23

¹The athletes' grades were compared using the quarter of participation and the quarter after.

²The athletes' grades were compared using the semester of participation and the quarter after.

³The athletes' grades were compared utilizing the quarter before and the quarter during participation.

TABLE VI
 COMPARISON OF THE MEAN INTELLIGENCE QUOTIENTS AND
 GRADE-POINT AVERAGES OF THE ONE-SPORT,
 TWO-SPORT, AND THREE-SPORT
 ATHLETES

	M.G.P.A.	M.I.Q.	Number	Range
Three-sport athletes	2.25	107.69	6	86-112
Two-sport athletes	2.06	99.99	23	74-127
One-sport athletes	1.92	98.38	21	72-123

though having a lower I.Q., do better than the two-sport and one-sport athlete. The three-sport athlete group contained no one with an I.Q. over 112, whereas the remaining groups had an individual as high as 127. This, then, indicates that an athlete who participates two hours a day for nine months does not suffer scholastically.

II. CONCLUSIONS

The study was made in an attempt to answer the following questions:

- A. Do athletes receive higher grades than non-athletes?
- B. Do the grades of an athlete go up or down while he is participating in a sport?
- C. Does participation in intramural sports have a bearing upon the grades of an individual?
- D. Are certain sports more conducive to good grades than others?
- E. Does participation in more than one sport affect an individual's grades?

After a thorough computation of students' grades, the dichotomizing of students, and the acquisition of test scores, these conclusions may be drawn on the ninth-grade boys at Edmonds Junior High:

- 1. The athlete, although lower in his ability grouping, has a greater degree of achievement than the non-athlete.

2. There is no visible difference in the grades of an athlete before, during, or after participation.
3. The question concerning intramurals was not resolved because the participants in the intramural program generally were also the active participants in the school's interscholastic sports program.
4. A student who participates in three sports does better scholastically than the two-sport or one-sport athletes, and the two-sport does better than the one-sport athlete.
5. The sports, ranked in mean intelligence quotient, are as follows: tennis, basketball, football, baseball, and track.
6. The sports, ranked in G.P.A., are as follows: basketball, football, tennis, baseball, and track. The non-athlete ranks below all sports participants.

In summary, there has been a great mis-emphasis on the scholastic success of the athlete. He does not suffer scholastically but actually does better. This, in addition to the skills he acquires from athletics.

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