

A COMPARISON OF GRADE-POINT AVERAGES AND I.Q. SCORES  
OF LETTERMEN, NON-LETTERMEN, AND NONPARTICIPANTS  
IN THE FOUR YEAR HIGH SCHOOL AT PRINCETON HIGH SCHOOL

by

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A MASTER'S REPORT

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requirements for the degree

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Department of Physical Education

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## INTRODUCTION

Today, more than ever, grades are becoming more important in high schools because of the increasing stress placed on grade averages in order to be accepted into our universities and colleges. With our population increase and automation, there are fewer jobs and increased competition for the more specialized positions. One of the important qualifications is education and high grades. With the question of grades, the discussion turns to, "Does athletic participation hinder a boy's scholastic grades?"

Probably no phase of school life has created as much popular and professional interest as has athletics. Many people have deplored the toll that they believed athletics was bound to take of the scholarship or academic achievement of the participants.<sup>1</sup>

It is generally agreed that athletics play a prominent part in the education program of the schools today. Schools throughout our nation have grown considerably in enrollment during the past two decades. Most public schools have attempted to keep pace with this increase by offering a broader curriculum to fit the various needs and interests of the pupil. Extra curricular activities have been given more emphasis, and athletics have become a major part of the high school program. With the broadening of the curriculum and increase in extraclass activities there are people who think of athletics as being a hindrance to the students' scholastic achievement.

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1 J. M. Jacobsen, "Athletics and Scholarship in the High School". School Review, April 1931, 39:280-287.

It is the hope that the investigation discussed in this paper may provide some of the answers that often arise in the area of athletics in our public schools.

#### PURPOSE

The purpose of this study was to attempt to provide concrete data from the scholastic and I.Q. records of the Princeton High School Jt. #10, Princeton, Kansas, which could provide a basis of comparison between non-athletes, non-lettermen, and lettermen in their ability to attain high scholastic grades. With this data, the question of whether or not participation in athletics hinders scholastic achievement or provides an incentive for pupils to maintain high grades to be eligible to compete in interscholastic athletics.

#### REVIEW OF LITERATURE

Through the years, numerous studies have been made concerning scholastic performance of athletes and non-athletes. These studies have been made on the junior high, senior high, and college level.

In a comparison made by Edwin Frank Hailey, a graduate student of Kansas State University, on the senior class of Highland Park High School, Topeka, Kansas, he concluded that the scholastic achievement of senior lettermen ranked higher than non-athletes for every year from 1955-58. The boys participating in athletics had higher I.Q. and grade point averages than the non-athletes.

The study indicated that boys engaged in interscholastic athletics received grades equal to those received by boys who were not members of such teams.<sup>2</sup>

In a comparison made by William Alfred Hargrave, a graduate student of Kansas State University, on the junior high level of freshmen in Manhattan, Kansas, Junior High School, he concluded the scholastic attainment of lettermen's grade averages was superior to those averages of the non-lettermen and the non-participants. The non-lettermen had the high I.Q. average, and the non-participants had the low average.<sup>3</sup>

#### MATERIALS AND METHOD

The data used in compiling this report included the grade point averages and intelligence quotients of 139 high school students over a four-year period from 1960 to 1963. The grades and intelligence test scores used for determining the grade point averages were secured from the permanent records from the office of the superintendent of Jt. District #10 at Richmond High School. The Otis Quick-Scoring Mental Ability Test is given to the students on the odd years, prior to their entrance into the ninth grade, with the exception of the transfer students who must wait until a test year. Some of the students in the 1959-1960 year were not tested, because the cumulative records were not instigated until the school year of 1961-1962.

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- 2 Edwin Frank Hailey, "A Comparison of Grade Point Averages and I.Q. Scores of Senior Lettermen, Non-lettermen, and Non-athletes at Highland Park High School". Unpublished Master's Report, 1959, p 18-19.
  - 3 William Alfred Hargrave, "A Comparison of Grade Point Averages and I.Q. Scores of Lettermen, Non-lettermen, and Non-participants at the High School Freshmen Level", Unpublished Master's Report, 1953, p 18.

If a student did not have an intelligence quotient in the cumulative file, his intelligence quotient was not averaged in the tables.

The entire school was used for a four-year period because of the small number of students enrolled in the class "B" school. It would not have been feasible to use only one class of students because of the small numbers. The scores of the 59 non-participants were those of boys who were not participating in interscholastic athletics.

The names and number of lettermen and non-lettermen were obtained from the athletic director's file at Princeton High School.

To give the letter grades on the permanent records a numerical value, the following procedure was used:

A equaled four (4) points

B equaled three (3) points

C equaled two (2) points

D equaled one (1) point

F equaled zero (0) points

Each individual was given points according to his letter grade in each solid course, and the total number of points was divided by the number of courses taken. Courses not used in this study were physical education, band, and chorus. These courses were not used because they did not receive a full credit in the school term.

During the four-year period which this study covered, letters were awarded to a total of 47 students. In the same four-year period, there were 35 students who participated in athletics but did not win a varsity letter during some time of the four-year period.

The following intelligence quotient scale is offered for comparison:<sup>4</sup>

140 and above . . . . .	Near Genius
120-139 . . . . .	Very Superior
110-119 . . . . .	Superior
90-109 . . . . .	Normal
80-89 . . . . .	Low Normal
70-79 . . . . .	Borderline
50-69 . . . . .	Moron
25-49 . . . . .	Imbecile
0-24 . . . . .	Idiot

When the term "lettermen" is used, it refers to those students who have won one or more letters in baseball, basketball, or track. Non-lettermen were those who participated on a squad, but never qualified for a letter. Non-participants were those students who did not take part in any of the three sports.

#### RESULTS AND DISCUSSION

Table 1. Comparison of the grade points and I.Q. averages of non-participants, non-lettermen and lettermen in baseball, basketball, and track for the 1959-1960 school year.

Classification	Number	Grade-point Average	I.Q. Average
Baseball lettermen	10	2.41	103
Basketball lettermen	8	2.51	104
Track lettermen	7	2.47	106

<sup>4</sup> Norman L. Munn, Psychology, p 60.



Table 1 (concl.)

Classification	Number	Grade-point Average	I.Q. Average
Non-lettermen	10	1.91	104
Nonparticipants	8	2.24	97

The statistics on this table involve the grade-point averages and I.Q. scores of 10 baseball lettermen, 8 basketball lettermen, 7 track lettermen, 8 non-lettermen, and 8 nonparticipants. This included all boys in Princeton High School who had completed a full year of school. All boys who did not take the Otis Quick-Scoring Mental Ability Test were not averaged in the I.Q. averages.

The data shows that in terms of grade-point averages, basketball (2.51), track (2.47), and baseball (2.41) ranked the highest in the order listed. Nonparticipants were next (2.24) and non-lettermen had the lowest grade average (1.91).

Track lettermen had the highest I.Q. average (106), while non-participants had the lowest I.Q. average (97). Basketball lettermen and non-lettermen shared second position with an I.Q. average of (104), with baseball following (103), in that order.

Table 2. Comparison of the grade points and I.Q. averages of non-participants, non-lettermen, and lettermen in baseball, basketball, and track for the 1960-1961 school year.

Classification	Number	Grade-point Average	I.Q. Average
Baseball lettermen	10	2.42	103



Table 2 (concl.)

Classification	Number	Grade-point Average	I.Q. Average
Basketball lettermen	10	2.42	103
Track lettermen	4	2.50	105
Non-lettermen	12	1.52	104
Nonparticipants	21	1.79	99

Table 2 included the grade-point and I.Q. averages of 10 baseball lettermen, 10 basketball lettermen, 4 track lettermen, 12 non-lettermen, and 21 nonparticipants for the school year of 1960-1961. The results showed that all the lettermen had a higher grade-point average than the non-athletes and nonparticipants; the track lettermen had the highest grade-point average (2.50); non-lettermen, the lowest grade-point average (1.52). Basketball and track lettermen were both in second position with a grade-point average of (2.42). Nonparticipants were next to the bottom with a (1.79) grade-point average.

Track lettermen had the highest I.Q. average (105), while non-participants had the lowest I.Q. average (99). Non-lettermen were second to track lettermen in I.Q. average (104), with baseball and basketball tied for third position with a (103) I.Q. average.

Table 3 Comparison of the grade-points and I.Q. averages of non-participants, non-lettermen, and lettermen in baseball, basketball, and track for the 1961-1962 school year.

Classification	Number	Grade-point Average	I.Q. Average
Baseball lettermen	10	2.15	106
Basketball lettermen	6	2.35	109
Track lettermen	10	2.11	106
Non-lettermen	8	2.17	105
Nonparticipants	15	1.28	96

The table included the grade-point and I.Q. averages of ten baseball lettermen, six basketball lettermen, ten track lettermen, eight non-lettermen, and fifteen nonparticipants for the year 1961-1962 school year. The baseball lettermen were high with a grade-point average of (2.35) and I.Q. average of (109). The non-lettermen ranked second with (2.17) grade average and were third with an I.Q. average of (105). Baseball lettermen were (.04) points higher than track lettermen and were tied with track for second with (106) I.Q. average. Nonparticipants were on the bottom with (1.48) grade average and (99) I.Q. average.

Table 4 Comparison of the grade-point and I.Q. averages of non-participants, non-lettermen, and lettermen in baseball, basketball, and track for the 1962-1963 school year.

Classification	Number	Grade-point Average	I.Q. Average
Baseball lettermen	11	2.55	104
Basketball lettermen	10	2.32	100
Track lettermen	10	2.54	102
Non-lettermen	5	2.16	101
Nonparticipants	14	1.48	99

The data on this table showed the grade-point averages and I.Q. averages for 11 baseball lettermen, 10 basketball lettermen, 10 track lettermen, 5 non-lettermen, and 14 nonparticipants. Baseball (2.55), track (2.54), and basketball (2.32) ranked one, two, and three in grade-point and I.Q. averages. The non-lettermen were fourth in grade averages (2.16) and I.Q. averages (101); the nonparticipants were on the bottom in both I.Q. average (99) and grade-point average (1.48).

Table 5 A composite of tables 1 through 4 showing a comparison of the grade-point and I.Q. averages of baseball lettermen, basketball lettermen, track lettermen, non-lettermen, and nonparticipants through the four-year period of 1959-1960 through 1962-1963.

Classification	Number	Grade-point Average	I.Q. Average
<u>1959-60</u>			
Baseball lettermen	10	2.41	103
Basketball lettermen	8	2.51	104
Track lettermen	7	2.47	106
Non-lettermen	10	1.91	104
Nonparticipants	8	2.24	97
<u>1960-61</u>			
Baseball lettermen	10	2.42	103
Basketball lettermen	10	2.42	103
Track lettermen	4	2.50	105
Non-lettermen	12	1.52	104
Nonparticipants	21	1.79	99

Table 5 (concl.)

Classification	Number	Grade-point Average	I.Q. Average
<u>1961-62</u>			
Baseball lettermen	10	2.15	106
Basketball lettermen	6	2.35	109
Track lettermen	10	2.11	106
Non-lettermen	8	2.17	105
Nonparticipants	15	1.28	96
<u>1962-63</u>			
Baseball lettermen	11	2.55	104
Basketball lettermen	10	2.32	100
Track lettermen	10	2.54	102
Non-lettermen	5	2.16	101
Nonparticipants	14	1.48	99

The highest grade-point average was recorded by the baseball lettermen in the 1962-63 year (2.54), and the lowest was scored by the nonparticipants (1.28) in the 1961-62 year. Basketball lettermen had the highest grade-point average for two of the four years. Track and baseball each shared one year in first position with the top grade averages. Non-lettermen shared the bottom position with the nonparticipants in grade averages; each ranked last for two years in a row.

The nonparticipants were lowest in I.Q. averages all four years. Track lettermen were in first position two years and baseball and basketball each ranked first one year. The non-lettermen ranked second two years, 1959-60 and 1960-61 school year.

They ranked third in the 1962-63 school year and fourth in the 1962-63 school year.

Table 6 The I.Q. score averages and grade-point averages of baseball, basketball, and track lettermen with non-lettermen and non-participants over the four-year period 1959-60 through 1962-63.

Classification	Number	Grade-point Average	I.Q. Average
Baseball lettermen	41	2.33	104
Basketball lettermen	34	2.40	104
Track lettermen	31	2.42	105
Non-lettermen	35	1.94	101
Nonparticipants	58	1.70	98

Over the four-year period covered by this study, a total of 106 letters were awarded. The letters were awarded to 41 boys in baseball. Thirty boys received awards in basketball, and 31 boys received track letters.

The table shows that track lettermen ranked first in grade-point averages (2.42) and I.Q. averages (105). Basketball lettermen were second in grade-point average (2.40) and shared second position with baseball with a 104 I.Q. average. Baseball ranked third in grade-point average (2.33).

The study showed that the nonparticipants received the lowest I.Q. average (98) and the lowest grade-point average (1.70). Non-lettermen were fourth in both cases with a (1.94) grade-point average and a (101) I.Q. average.

Table 7 Comparison of the grade-point and I.Q. averages of lettermen, non-lettermen, and nonparticipants for the 1959-60 year.

Classification	Number	Grade-point Average	I.Q. Average
Lettermen	25	2.46	104
Non-lettermen	10	1.91	104
Nonparticipants	8	2.24	97

Table 7 showed the total number of lettermen, non-lettermen, and nonparticipants with their grade-point and I.Q. averages for the school year 1959-60. There was a total of 25 lettermen when baseball, basketball, and track were combined. There were 10 non-lettermen and 8 nonparticipants.

The lettermen had the highest grade-point average (2.46). The nonparticipants were second, the only time they ranked above lettermen and nonparticipants with a grade-point average of (2.24). Nonparticipants were lowest with a (1.91) grade-point average. Lettermen and non-lettermen were tied for top position with a (104) I.Q. average. The nonparticipants were lowest with a (97) I.Q. average.

Table 8 Comparison of the grade-point and I.Q. averages of lettermen, non-lettermen, and nonparticipants for the 1960-61 school year.

Classification	Number	Grade-point Average	I.Q. Average
Lettermen	24	2.44	104
Non-lettermen	12	1.52	104
Nonparticipants	21	1.79	99



The information in table 8 for the 1960-61 school year showed that the 24 lettermen had the highest grade-point average (2.44) and were tied for high along with non-lettermen with (104) I.Q. average. There were 21 nonparticipants with the lowest I.Q. average of (99) and the middle grade-point average (1.79). The non-lettermen had the lowest grade-point average (1.52).

Table 9 Comparison of the grade-point and I.Q. averages of lettermen, non-lettermen, and nonparticipants for the 1961-62 school year.

Classification	Number	Grade-point Average	I.Q. Average
Lettermen	26	2.20	107
Non-lettermen	8	2.17	105
Nonparticipants	15	1.28	96

In the school year 1961-62, Princeton High School awarded letters to 26 boys. There were 8 boys who participated and did not receive a letter. Fifteen boys did not participate in athletics.

The lettermen were first with a (2.20) grade average and a (107) I.Q. average. The non-lettermen took second position in both grade average (2.17) and I.Q. average (105). The nonparticipants had the lowest grade average (1.28) and I.Q. average (96) for the four-year period.

Table 10 Comparison of grade-point and I.Q. averages of lettermen, non-lettermen, and nonparticipants for the 1962-63 school year.



Table 10 (concl.)

Classification	Number	Grade-point Average	I.Q. Average
Lettermen	31	2.47	102
Non-lettermen	5	2.16	101
Nonparticipants	14	1.48	99

For the second year in a row the nonparticipants were lowest with a (1.48) grade average and a (99) I.Q. average. For the fourth time, in as many years, the lettermen were first or tied for first position in grade average (2.47) and I.Q. average (102).

The non-lettermen had the second highest grade average (2.16) and ranked second for the second time with a (101) I.Q. average.

Table 11 A four-year composite of grade-point averages and I.Q. averages of lettermen, non-lettermen, and nonparticipants through the years 1960-63.

Classification	Number	Grade-point Average	I.Q. Average
<u>1959-60</u>			
Lettermen	25	2.46	104
Non-lettermen	10	1.91	104
Nonparticipants	8	2.24	97
<u>1960-61</u>			
Lettermen	24	2.44	104
Non-lettermen	12	1.52	104
Nonparticipants	21	1.79	99
<u>1961-62</u>			
Lettermen	26	2.20	107

Table 11 (concl.)

Classification	Number	Grade-point Average	I.Q. Average
<u>1961-62 (cont'd)</u>			
Non-lettermen	8	2.17	105
Nonparticipants	15	1.28	96
<u>1962-63</u>			
Lettermen	31	2.47	102
Non-lettermen	5	2.16	101
Nonparticipants	14	1.48	99

Over the four-year period covered by this table, the lettermen held the highest grade-point average for each year. The nonparticipants were lowest in 1961-62 and 1962-63.

The non-lettermen were lowest in 1959-60 and 1960-61 years. The highest I.Q. average was recorded by the lettermen in the 1961-62 year (107). The lettermen were first or shared first position all four years. The nonparticipants were low each of the four years. The non-lettermen ranked second in 1961-62, 1962-63 years and shared first position during the 1959-60, 1960-61 years.

Table 12 A comparison of grade-point and I.Q. averages of lettermen, non-lettermen, and nonparticipants over the four-year period of 1959-60 through 1962-63 school year.

Classification	Number	Grade-point Average	I.Q. Average
Lettermen	106	2.39	104
Non-lettermen	35	1.94	104
Nonparticipants	58	1.70	98

Table 12 showed the grade-point and I.Q. averages of 106 lettermen, 35 non-lettermen, and 58 nonparticipants. Lettermen had the highest grade-point average (2.39) and tied for first with the non-lettermen with a (104) I.Q. score. The non-lettermen ranked second in grade averages with (1.94). The nonparticipants ranked last with a grade average of (1.70) and I.Q. average of (98).

Table 13 A comparison of grade and I.Q. averages of one-sport, two-sport, and three-sport lettermen with non-lettermen and nonparticipants over the four-year period, 1959-60 year through 1962-63 school years.

Classification	Number	Grade-point Average	I.Q. Average
Three-sport lettermen	22	2.53	106
Two-sport lettermen	15	2.26	110
One-sport lettermen	10	1.83	100
Non-lettermen	35	1.94	104
Nonparticipants	58	1.70	98

Table 13 showed grade-point and I.Q. averages for 22 three-sport lettermen, 15 two-sport lettermen, 10 one-sport lettermen, 35 non-lettermen, and 58 nonparticipants. The three-sport lettermen had the highest grade-point average (2.53) and lacked .01 of a point of having the highest grade-point average of any group in this report. The one-sport lettermen were the only lettermen to rank lower than the non-lettermen. The two-sport lettermen ranked second with a (2.26) grade-point average and the nonparticipants ranked lowest in grade-point average (1.70) and I.Q. average (98). Two-sport ranked first in I.Q. averages with (110).

Three-sport (106), non-lettermen (104), one-sport (100) ranked respectively second, third, and fourth in I.Q. averages.

Table 14 A composite of grade-point averages and I.Q. averages of all baseball lettermen, basketball lettermen, track lettermen, one-sport lettermen, two-sport lettermen, three-sport lettermen, non-lettermen, nonparticipants, and lettermen for the four-year period 1959-60 and through 1962-63.

Classification	Number	Grade-point Average	I.Q. Average
Baseball lettermen	41	2.33	104
Basketball lettermen	34	2.40	104
Track lettermen	31	2.42	105
One-sport lettermen	10	1.83	100
Two-sport lettermen	15	2.26	110
Three-sport lettermen	22	2.53	106
Non-lettermen	35	1.94	104
Nonparticipants	58	1.70	98
Lettermen	106	2.39	104

The information included in table 14 showed the grade-point average and I.Q. average of 41 baseball lettermen, 34 basketball lettermen, 31 track lettermen, 10 one-sport lettermen, 15 two-sport lettermen, 22 three-sport lettermen, 35 non-lettermen, 58 nonparticipants, and 106 lettermen.

The two-sport lettermen had the highest I.Q. average (110). Three-sport lettermen were second (106) only one point above the track lettermen (105). Baseball lettermen, basketball lettermen, lettermen, and non-lettermen were fourth with (104). One-sport (100), and nonparticipants (98) were last.

The two-sport lettermen had the highest grade-point average (2.53). Following first in order were these: Track lettermen (2.42), basketball lettermen (2.40), lettermen (2.39), baseball lettermen (2.33), two-sport lettermen (2.26), non-lettermen (1.94), one-sport lettermen (1.83), and nonparticipants (1.70).

#### CONCLUSIONS

From the data collected during the four-year period 1959-60 through 1962-63 school year the following conclusions were drawn:

1. The scholastic grade average of baseball, basketball, and track lettermen at Princeton High School surpassed nonparticipants each year from 1959-1960 through 1962-1963 school term.
2. The data showed that the I.Q. average of baseball, basketball, and track lettermen was higher for all the four years this report covered according to the Otis Quick-Scoring Mental Ability Test.
3. Baseball lettermen, basketball lettermen, track lettermen, and non-lettermen ranked higher than the nonparticipants in grade-point averages.
4. The I.Q. averages of lettermen and non-lettermen were higher than the nonparticipants.
5. The data indicated that lettermen attained the highest grade-point average and the nonparticipants received the lowest grade-point average.
6. One-sport, two-sport, three-sport, and non-lettermen exceed the nonparticipants in grade-point average and I.Q. average.

7. Three-sport, two-sport and one-sport lettermen ranked in order, one, two, and three in grade-point average.
8. The results of this study showed that boys engaged in interscholastic athletics received grades nearly one letter grade higher than those not taking part in athletics.
9. According to the intelligence quotient scale used in this report, the two-sport lettermen ranked superior. All of the other groups ranked in the normal range.
10. There was no conclusive evidence to indicate that the boys participating in one certain sport attained higher scholastic grade average than those boys in any other sport.
11. This study indicated that interscholastic athletics can provide an incentive for boys to maintain high scholastic grades and does not hinder scholastic achievement.

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MANHATTAN, KANSAS

1963

## ABSTRACT

The purpose of this study was to obtain basic data concerning the scholastic achievement of lettermen, non-lettermen, and nonparticipants in the four-year high school at Princeton High School, Princeton, Kansas, by comparing factual data obtained from the records of the school. This study was made to help provide concrete information regarding whether boys competing in interscholastic athletics would be hindered scholastically or if they were provided an incentive to maintain high grades.

The study began by collecting the grades and intelligence quotient test scores of all boys attending Princeton High School during the period of 1959-60 through 1962-63 school years. The grades of each student were given a numerical value and the grade-point averages were compiled. To find the I.Q. averages, the scores of the Otis Quick-Scoring Mental Ability Test were used. With the grade-point averages and I.Q. test scores, averages were figured for the specific groupings that were to be compared in the study.

The study revealed that over the four-year period, 1959-60 through 1962-63 school years, baseball, basketball, track, and non-lettermen achieved a higher grade-point average and I.Q. average than the non-participants. All lettermen averaged a (2.00) grade average or higher, while the non-lettermen and nonparticipants ranged in the (1.00) scale.

Regarding the specific sports, the track lettermen ranked first in grade-point averages and I.Q. averages for two of the four years.

Basketball ranked first for two years and baseball was third for three years and tied with basketball for second during one year in grade-point averages; at no time did the nonparticipants rank above any of the lettermen or non-lettermen.

Boys who lettered in one-sport, two-sports, three-sports, and the non-lettermen, achieved a higher scholastic grade-point average and I.Q. average than the nonparticipants. The three-sport lettermen had the highest grade-point average and were followed in order by the two-sport, non-lettermen, and one-sport lettermen. The two-sport lettermen recorded the highest I.Q. average and were followed by the two-sport lettermen. Non-lettermen were third and were followed by the one-sport lettermen.

Taking all groups of the study together, the three-sport lettermen had the highest grade-point average. The grade-point averages and I.Q. averages of all groups in this report were above the grade-point averages and I.Q. averages of the nonparticipants.

It was concluded that all lettermen surpassed the nonparticipants in grade-point average and I.Q. averages. At no time in this report did the nonparticipants score a higher grade-point average than the lettermen. Boys participating on athletic teams, whether it be one-sport, two-sports, or three-sports, received scholastic grades higher than those of the nonparticipants. The scholastic ability of the athletes is not affected by participating in athletics. Athletes do gain an incentive to receive high scholastic grades.