THE RELATIONSHIP BETWEEN STUDENT ATHLETIC INVOLVEMENT AND
GRADE POINT AVERAGE

By

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CHAPTER ONE: INTRODUCTION TO THE STUDY

Introduction

School athletics have long been a staple of educational systems and often entwine themselves into the fabric of communities. These extra-curricular endeavors have been accepted into American culture as a fundamental piece of the educational experience and are credited with developing and enhancing many desirable attributes that cannot always be garnered through classroom work. From the Friday night caravan en route to a rival’s gridiron to a snow-trekked trip to a neighboring gymnasium, school athletics garner the support that defines communities and develops bonds that bridge both time and generations. It is these bonds that forge a sense of identity and belonging and pull former students back an area they call “home.”

Extra-curricular athletics do much more than create a sense of community and belonging. They generate skills and habits that translate not only into success within their sports’ parameters but, more importantly, also enables success in the classroom, the community, and beyond into a person’s professional years. Additionally, team sports can sharpen one’s ability to work with other members of a team toward the completion of a common goal, resolve conflict with other individuals, and develop the coping skills necessary to be successful in an increasingly interdependent world.
Today’s society is inundated with comforts and entertainment that promote a sedentary lifestyle. From video games that consume hours at a time to satellite dishes that provide hundreds of channels to surf, the average American has been led down a stationary path to obesity and health problems, the couch and recliner their chariot of choice. Neighborhood lots that once hosted sandlot games now give way to weeds and brush while its former visitors occupy darkened rooms. Body by Jake has been replaced with Body by Playstation.

As America’s obesity numbers and health issues continue to mount, it is paramount that we find ways to reverse these unfortunate trends and once again promote healthy living. Participation in school athletics provides young people with opportunities to develop physically, socially, and intellectually, as well as plants the seeds for regular exercise, proper nutrition, and overall healthy behaviors for their adult life. Additionally, school athletic programs provide external motivation for maintaining good grades and the discipline and structure to develop internal motivation for doing so. As technology continues to ease the “burdens” of life it is important that, as a responsible society, we encourage our youth to remain active. Participation in sports is an excellent avenue in which to do so.

Both variables examined in this study, student athletic involvement and grade point average, carry significant importance when examining the merits of our educational system. Student grade point average is the uniform measurement that is employed to compare student academic progress and achievement and is used to quantify what a student has learned. This quantification plays a paramount role in determining student career path choices and post-
secondary opportunities. Student athletic involvement plays a complimentary role to student grade point average. It is through school athletics that students gain the ability to work with peers towards a common goal, learn how to handle adversity, and develop a connection between themselves and the community that they call home.

Statement of the Problem

Many schools have experienced a decline in the number of students who participate in extra-curricular activities, namely sports. The reasons vary from location to location but the common thread is typically that there are more options for students to choose from when looking for something to occupy their time than there were for past generations. Couple that with the creation of a sedentary society, and a high number of students choose not to participate in sports programs.

This phenomenon creates a student body that is probably less healthy, does not possess a high level of school spirit, and lacks ownership in their school and, later in life, their community. In many communities, the schools are the backbone of the local culture. As we graduate more and more students who were not active participants in their schools’ functions, we will see a disconnect develop between the school and community.

The fundamental problem is that there is a lack of research in Albany High School that examines whether participation in school athletics leads to a higher grade point average.
Purpose

The purpose of this study is to determine if a significant relationship exists between a student’s involvement in extra-curricular sports programs and that same student’s grade point average. In order to determine if a relationship exists, this study is conducted using a simple correlation. While a correlation cannot necessarily indicate a causal relationship, it can determine if a relationship, in fact, exists and allows for further examination and research into whether a causal relationship does exist.

Research Questions

The research questions involved in this study are listed below:

RQ1: What are the summary statistics of the study?

RQ2: Is there a significant relationship between student athletic involvement and grade point average?

Null Hypothesis: There is no significant relationship between student involvement in school-sponsored athletics and that same student’s grade point average. Alpha = 0.25
CHAPTER TWO: REVIEW OF LITERATURE

Athletic programs have always played a pivotal role in the establishment of a school’s culture and provide numerous valuable benefits to its participants. These benefits can occur both within and outside of the school environment. The bottom line, according to many knowledgeable on the subject, is that involvement in athletics allow for substantial growth in many areas of a person’s life.

Many factors play an important role in the social, physical, and intellectual development of a child. While the premise of this research paper is to find a correlation between student athletic involvement and student academic achievement, there are many factors outside of this one variable that also have a great influence on that very achievement. One factor that impacts student success in the classroom is self-efficacy beliefs. In the article *Multifaceted Impact of Self-Efficacy Beliefs on Academic Functioning*, authors Albert Bandura, Claudio Barbaranelli, Gian Caprara, and Concetta Pastorelli examine the relationship that exists between student academic achievement and placement and self-perception. In this study, the authors found that not just student perception of self impacted their achievement, but their parents beliefs also impacted student achievement. According to the article, “the parents sense of academic efficacy and aspirations for their children were linked to their children’s scholastic achievement through their perceived academic capabilities and aspirations. Children’s beliefs in their efficacy to regulate their own learning and academic attainments, in turn, contributed to scholastic achievement both independently and by promoting high academic aspirations and pro-social behavior and reducing vulnerability to feelings of futility and depression.” Therefore,
parental academic efficacy enhances children’s sense of academic efficacy. Conversely, a lack of parental academic efficacy deflates children’s sense of academic efficacy, causing a decrease in student academic achievement (Bandura, Barbaranelli, Caprara & Pastorelli, 1996).

The authors also believe that parents with high aspirations and expectations for their children can also impact their children’s education independently of their direct contact with their children. Parents with positive involvement in the educational process convey a sense of responsibility and commitment and, thereby, increase teachers’ educational commitment to the children. By influencing what children expect of their children, parents can render a positive impact on their children’s academics that is greater than simply molding their children’s perception of the value of education. In their study, the authors found that “children’s beliefs in their academic efficacy and aspirations are similarly accompanied by prosocialness, peer acceptance, low despondency, repudiation of moral disengagement, a low level of emotional and behavioral problems, and high scholastic achievement (Bandura, Barbaranelli, Caprara & Pastorelli, 1996).

Lawrence Steinberg, Susie Lamborn, Sanford Dornbusch, and Nancy Darling discuss similar parental impacts on student academic achievement in their article Impact of Parenting Practices on Adolescent Achievement: Authoritative Parenting, School Involvement, and Encouragement to Succeed. In the article the authors examine the impact of authoritative parenting, parental involvement in school, and parental encouragement to succeed have on student academic achievement. Authoritative parenting is defined by a combination of high levels of parental responsiveness and high levels of demand and expectation. Three specific
components authoritarian parenting contribute to healthy psychological and academic
development: parental acceptance or warmth, behavioral supervision and strictness, and
psychological autonomy granting or democracy. These three components-warmth, control, and
democracy- allow for adequate social, psychological, and cognitive growth and, thus, contribute
to student scholastic achievement.

Like Bandura’s article on self-efficacy beliefs, this article states that higher levels of
student achievement are associated with greater parental encouragement. “Indeed,
considerable research in the tradition of what is known as the Wisconsin Status Attainment
Model suggests that parental encouragement is the primary mediator of the well-established
connection between family social class and student academic performance” (Steinberg,
Lamborn, Dornbusch & Darling, 1992). The findings of the study both replicated and extended
previous research on the relation between authoritative parenting as described above- warm,
firm, and democratic- and student academic achievement. Additionally, how parents express
their involvement and encouragement may be as important as whether, and to what extent,
they do.

Chemical abuse has an extraordinary impact on student academic achievement. William
Jeyenes discusses that impact in his article The Relationship Between the Consumption of
Various Drugs by Adolescents and Their Academic Achievement. In his study, Jeyenes examines
and analyzes students who use or consume marijuana, cocaine, alcohol, and cigarettes. He
found that all listed drugs had an adverse effect on academic achievement. Among all the
groups, cigarette smoking and being drunk at school produced the most consistently
statistically significant effects. Cocaine use showed the largest regression, probably, as Jeyenes stated, because of the small number of students who reported being under the influence of cocaine while at school. That is not to say, however, that being under the influence of cocaine did not have an extreme detrimental impact on student academic achievement.

Most studies in this area have centered around three situations: 1) the relationship between prenatal substance abuse and academic outcomes; 2) the relationship between substance abuse, in general, and intellectual abilities, and 3) the relationship between substance abuse and academic outcomes. Studies have also been conducted that have shown that there is a relationship between the alcohol consumption patterns of college students and their college GPA. Similar to Jeyenes study, these studies conclude that students who consumed more alcohol tended to have lower GPAs (Jeyenes, 2002).

Jeyenes not only credits the consumption of marijuana, cocaine, alcohol, and cigarettes with the production of lower academic achievement, but also examines the other side of the coin. It is possible that poor academic achievement assigns students to a social class of peers that are more likely to participate in the consumption of these substances. According to Jeyenes, this two-way causal relationship deserves acknowledgement. Additionally, “it would be nice to just simply lower the adolescent consumption of these drugs to the point that there was a considerable impact on academic achievement. Nevertheless, the reality of the matter is that the consumption of these drugs is the product of a host of other factors which make their consumption more likely. Therefore, although the consumption of these drugs may be a cause
of decreased academic achievement; it is important to note that there are a number of other factors that are the ultimate causes of excessive drug consumption” (Jeyenes, 2002).

According to prior research, student socioeconomic status can also be a predictor of scholastic achievement. In the article *Effect of School Population Socioeconomic Status on Individual Academic Achievement*, Stephen Caldas and Carl Bankston III examine the relationship between the socioeconomic status of peers and individual academic achievement. In the study, student participation in the federal free/reduced-price lunch program was used as an indicator of poverty status, and parental educational and occupational background was used to determine family social status. According to the authors, peer family social status has a significant impact on individual academic achievement. In fact, this specific situation has an only slightly less impact than one’s own family social status. Researchers have long agreed that peer groups influence behavior in a myriad of ways: social behavior, participation in sports and activities, interaction with authoritative figures, etc. The conclusion of this study showed that academic achievement is included in the umbrella of behaviors that are impacted by an individual’s peer group (Caldas & Bankston III, 1997).

Just as there are many factors that impact student academic achievement besides participation in school sports programs, the benefits of participating in those programs are certainly not limited to high academic output. The benefits of participating in sports is wide-ranging and include physical, social, and cognitive attractions. Herbert Marsh and Sabina Kleitman discuss those benefits in their article *School Athletic Participation: Mostly Gain With Little Pain*. According to the authors, “high school sports had positive effects on many Grade 12
and postsecondary outcomes” including “school grades, coursework selection, homework, educational and occupational aspirations, self-esteem, university applications, subsequent college enrollment, and eventual educational attainment” (Marsh & Kleitman, 2003). Marsh reviewed ample amounts of research concerning athletic participation and it all supported that there were numerous positive effects attributed to athletic participation across a variety of broadly defined academic, social, and psychological outcomes, and little or no evidence that participation in school sports had negative effects. Research also stated athletic participation produced lower high school drop-out rates and higher university attendance rates when compared to other school-based activities such as student government and academic clubs. Further research conducted by Marsh and Kleitman showed “that regardless of race, socio-economic status, and gender, the grades of athletes were consistently higher than those of non-athletes, their attendance rates were greater, and their discipline referrals were fewer.” Additionally, “student-athletes reported fewer mental and general health problems or eating and dietary problems that non-athletes” (Marsh & Kleitman, 2003).

In order to explain why non-academic school-based activities benefit academic outcomes, Marsh and Kleitman offered the school identification/commitment model. This models states that activities that foster identification with the school and commitment to school-related values are likely to have benefits across a range of academic, as well as non-academic, outcomes.

Another benefit of participating in extra-curricular sports programs is the healthy lifestyle and habits that are ingrained into student-athletes. Given that healthy lifestyles-
proper nutrition, regular exercise, avoidance of substance abuse, healthy sexual choices - are a growing concern among not only American youth, but also the public in general, the early establishment of habits that would promote such a lifestyle is paramount to the general health of the citizenry. Russell Pate, Stewart Trost, Sarah Levin, and Marsha Dowda discuss the relationship between athletic participation and a healthy lifestyle in their article *Sports Participation and Health-Related Behaviors Among US Youth*. According to their research, approximately seventy percent of male students and fifty three percent of female students reported that they participated in at least one athletic season in school. Male athletes were more likely than male non-athletes to report fruit and vegetable consumption, more likely to report trying to lose weight, and less likely to report cigarette smoking, drug use, or alcohol consumption. Female athletes, when compared to female non-athletes, were more likely to report vegetable consumption and less likely to report having sexual intercourse in the previous three months. Based on the findings of their study, the authors concluded that “sports participation is highly prevalent among US high school students, and is associated with numerous positive health behaviors” (Pate, Trost, Levin & Dowda, 2000).

In the article *Untangling the Links among Athletic Involvement, Gender, Race, and Adolescent Academic Outcomes*, authors Kathleen E. Miller, Merrill J. Melnick, Grace M. Barnes, Michael P. Farrell, and Don Sabo examine how involvement in sports impacted student achievement. The article goes one step further and studies how differences in race, gender, and self-image also impacts academic achievement for those students who participate in school-sponsored sports. The two dimensions within the group of students who participated in sports were students who identified themselves as “jocks” and those who identified themselves
as “athletes.” Female and black adolescents who identified themselves as “jocks” reported lower grades than those who did not, whereas female athletes reported higher grades than female non-athletes. Jocks also reported significantly more misconduct, such as skipping school, cutting classes, having someone from home called to the school for disciplinary purposes, and being sent to the principal’s office, than non-jocks (Miller, Melnick, Barnes, Farrell & Sabo, 2005).
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

Purpose and Overview

The purpose of this study is to determine what type of relationship exists between student athletic involvement and grade point average. As there has been no previous research conducted at Albany High School on this matter, it is unknown if a significant relationship exists.

Research Design

The research design was a comparison of mean grade point averages between two groups of students. The first group studied included all students who did not participate in extra-curricular athletics at Albany R-III High School during the 2010-2011 school year. The second group studied included all students who did participate in extra-curricular athletics at Albany High School during the same school year. This group included students who participated in all three sports seasons, two sports seasons, and only one sports season for the given year. The purpose of this group division was to identify the mean grade point averages for students who participate in zero sports and students who participated in at least one sport at Albany High School during the 2010-2011 school year.

Research Questions

RQ1: What are the summary statistics of the study?

RQ2: Is there a significant relationship between student athletic involvement and grade point average?
Study Group

The data collected came from 137 students from Albany R-III High School during the 2010-2011 school year. This group comprised the entirety of the school's 9-12 student population and included students between the ages of fifteen to eighteen years old.

Data Collection

Data were collected through the guidance and counseling office of Albany R-III High School. Student grade point averages for the 2010-2011 school year were figured. Students were then identified as participating in zero sports, one sport, two sports, or three sports for the given school year.
CHAPTER FOUR: PRESENTATION OF THE DATA ANALYSIS, FINDINGS AND INTERPRETATIONS

Introduction

The primary purpose of this study is to determine if a significant relationship exists between a student’s involvement in extra-curricular sports programs and that same student’s grade point average. In order to determine if a significant relationship exists, the mean grade point average of students who were involved in extra-curricular sports were compared to the mean grade point average of students who were not involved in extra-curricular sports.

Findings

The following tables show varying information gathered from data concerning athletic participation and grade point average from Albany R-III High School. Data were gathered from all 9-12 students at Albany High School during the 2010-11 school year. The data gathered reflects the number of sports seasons each student participated in and their cumulative grade point average for the 2010-11 school year. The fall sports season includes football, cheerleading, girls softball, and girls golf. The winter sports season includes boys and girls basketball, cheerleading, and wrestling. The spring sports season includes boys and girls track, and boys golf. The most sports seasons a student can participate in during the school year is three seasons.

Table 1 and Table 2 display the number of students at Albany R-III high school that were involved in each sports season. More students did not participate in any sports than participated in any of the three seasons independently. Among the males that did participate
in sports, there was a higher number of participants that were active in either one or three seasons. Most females either did not participate in any sports or participated in just one sports season.

Table 1

*Total Number of Students Involved in Athletic Seasons*

<table>
<thead>
<tr>
<th>Zero Seasons</th>
<th>One Season</th>
<th>Two Seasons</th>
<th>Three Seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>42</td>
<td>22</td>
<td>21</td>
</tr>
</tbody>
</table>

Table 2

*Number of Male/Female Students Involved in Athletic Seasons*

<table>
<thead>
<tr>
<th></th>
<th>Zero Seasons</th>
<th>One Season</th>
<th>Two Seasons</th>
<th>Three Seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>27</td>
<td>17</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>25</td>
<td>12</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 3 displays the number and percentage of students involved in at least one sport and the number and percentage of students not involved in any sports. According to the table, more students participate in at least one sports season than do not. Table 4 shows that there is only a slightly higher percentage of females involved in at least one sports season than compared to males.

Table 3

*Total Number of Students Involved in At Least One Athletic Season*

<table>
<thead>
<tr>
<th>Involved</th>
<th>Not Involved</th>
<th>Percentage Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>52</td>
<td>62%</td>
</tr>
</tbody>
</table>
Table 4  

Number of Male/Female Students Involved in At Least One Athletic Season  

<table>
<thead>
<tr>
<th></th>
<th>Involved</th>
<th>Not Involved</th>
<th>Percentage Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>44</td>
<td>28</td>
<td>61%</td>
</tr>
<tr>
<td>Female</td>
<td>41</td>
<td>24</td>
<td>63%</td>
</tr>
</tbody>
</table>

Table 5 shows the total number of students involved in each sports season. The fall sports season saw the largest number of overall participants. Despite offering only two sports for boys and just one sport for girls, the spring sports season only had three fewer participants than the winter sports season.

Table 5  

Total Number of Students Involved in Each Athletic Season  

<table>
<thead>
<tr>
<th>Season</th>
<th>Involved</th>
<th>Not Involved</th>
<th>Spring Sports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Sports</td>
<td>64</td>
<td>49</td>
<td>46</td>
</tr>
</tbody>
</table>

Table 6 shows the mean grade point average for all students involved in at least one sports season and the mean grade point average for all students who are not involved in any sports. The mean grade point average for athletes was six-tenths of a point higher than the mean grade point average for non-athletes. Table 7 shows that the mean grade point average for male athletes was seven-tenths of a point higher than the mean grade point average for male non-athletes. The mean grade point average for female athletes was five-tenths of a point higher than the mean grade point average for female non-athletes.
### Table 6

*Grade Point Average of Athlete vs. Non-Athlete*

<table>
<thead>
<tr>
<th>Athlete (85 Students)</th>
<th>Non-Athlete (52 Students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2 GPA</td>
<td>2.6 GPA</td>
</tr>
</tbody>
</table>

### Table 7

*Grade Point Average of Male/Female Athlete vs. Male/Female Non-Athlete*

<table>
<thead>
<tr>
<th></th>
<th>Athlete</th>
<th>Non-Athlete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3.1 GPA (43 Students)</td>
<td>2.4 GPA (27 Students)</td>
</tr>
<tr>
<td>Female</td>
<td>3.4 GPA (44 Students)</td>
<td>2.9 GPA (23 Students)</td>
</tr>
</tbody>
</table>
Table 8

*Male vs. Female Athlete*

Boys v Girls (GPA)

A significant difference was found (t=3.85; p = <0.0001). Girls (n=70) had much higher (Mean Boys – Mean Girls = 0.419) values higher than boys (n=69); see table

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>70</td>
<td>69</td>
<td>139</td>
</tr>
<tr>
<td>(\sum X)</td>
<td>196.89999</td>
<td>223.00000</td>
<td>419.90000</td>
</tr>
<tr>
<td>(\sum X^2)</td>
<td>594.09000</td>
<td>736.78000</td>
<td>1330.87000</td>
</tr>
<tr>
<td>SS</td>
<td>40.2384</td>
<td>16.0699</td>
<td>62.4095</td>
</tr>
<tr>
<td>mean</td>
<td>2.8129</td>
<td>3.2319</td>
<td>3.0209</td>
</tr>
</tbody>
</table>

**Results**

<table>
<thead>
<tr>
<th>Mean(_a)−Mean(_b)</th>
<th>t</th>
<th>df</th>
<th>one-tailed</th>
<th>two-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.419</td>
<td>-3.85</td>
<td>137</td>
<td>&lt;.0001</td>
<td>0.000181</td>
</tr>
</tbody>
</table>

For independent samples, these results pertain to the "usual" t-test, which assumes that the two samples have equal variances.
Table 9

One-Sport Athlete vs. Two-Sport Athlete

A significant difference was found (t=5.56; p = <0.0001). One sport students (n=51) had much higher (Mean One Sport – Mean Two Sport = 0.5966) values higher than two sport students (n=88); see table

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>51</td>
<td>88</td>
</tr>
<tr>
<td>ΣX</td>
<td>134.8</td>
<td>285.10000</td>
</tr>
<tr>
<td>ΣX²</td>
<td>380.84000</td>
<td>950.03000</td>
</tr>
<tr>
<td>SS</td>
<td>24.5451</td>
<td>26.3708</td>
</tr>
<tr>
<td>mean</td>
<td>2.6431</td>
<td>3.2398</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean_a – Mean_b</th>
<th>t</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.5966</td>
<td>-5.56</td>
<td>137</td>
<td>one-tailed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>two-tailed</td>
</tr>
</tbody>
</table>

For independent samples, these results pertain to the "usual" t-test, which assumes that the two samples have equal variances.

This data indicates that 68% of the student population possessed a grade point average between 2.35 and 3.59. The mean grade point average for non-athletes is 2.6 with a standard deviation of 0.700644, which means 68% of this population had a grade point average between 1.64 and 3.30. Conversely, athletes had a mean grade point average of 3.2 with a standard deviation of 0.550557. This data states that 68% of athletes had a grade point average between 2.65 and 3.75. While there are certainly exceptions in terms of students from each group who achieved high and low grade point averages, this data suggests that students who participated
in at least one sports season showed more consistency in achieving higher grade point averages.
CHAPTER FIVE: CONCLUSIONS, IMPLICATIONS, AND NEW LEARNING

Conclusions and Recommendations

Based on the tables above, students involved in at least one extracurricular sports season attain a higher mean grade point average. The causes of this higher mean grade point average could contributed to many factors ranging from minimum GPA requirements for sports eligibility to high levels of motivation and expectations.

This study provides only a comparison of mean grade point averages between students involved in at least one school sport and students involved in zero school sports at Albany High School. Similar research at different high schools would provide a broader base of knowledge by which one could draw accurate conclusions. Additionally, research that examines the relationship between student grade point average and student involvement in co-curricular activities such as band, choir, Future Farmers of America, and like organizations would provide a broader spectrum of all student activities and determine their benefits towards student academic achievement.

As discussed in this research, there are many factors that impact a student’s grade point average. Additionally, the benefits of participation in extracurricular school sports programs are far reaching. Based on the data above, student involvement in these programs offer a distinct advantage in terms of academic achievement.
References


