# SPORTS PARTICIPATION: <br> HOW IT AFFECTS HIGH SCHOOL STUDENTS ACADEMICALLY 

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Joshua P. Fountain
Northwest University
Masters in Teaching Program
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#### Abstract

With the current economy, schools are forced to tighten their budget. One way to cut costs is to cut sports programs. Research on how sports programs affect a student is mixed. The purpose of this research project is to clarify this question, determining how sports participation affects high school students academically. Data for the research was collected from Avalon High School's GPA records and from surveys distributed to students and teachers. The results indicate that student athletes achieve a higher GPA when compared to non-athletes. In addition sports play a motivational role for student athletes that drive them to succeed. Further research is needed since it is still to be determined whether it is sports that contribute directly to this academic success.


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## Introduction

Jack ${ }^{1}$ is a football player at Avalon High School ${ }^{2}$. He goes to school because of football. He keeps up with his grades so he is eligible to practice and compete for the team. He hopes that one day his ability on the field will earn him a scholarship to some college. Football motivates Jack, provides a social network, and establishes a self identity. Football is his life.

Jack is not alone. Many student athletes are motivated to go to school because they participate in school sponsored sports, but many sports programs in schools are now threatened. With the current economy, schools are forced to tighten their budgets. One of the ways many schools are choosing to reduce expenses is to cut school sports. It is true that sports are expensive; coaches' salaries need to be paid, equipment needs to be bought, and transportation costs need to be covered. For example, schools in Lincoln County and Fairfax County in Virginia have considered the idea of ending some of their sports programs to meet a budget set for the 2010 school year (Matthews, 2009). Other schools, including Mansfield High School near Boston, Massachusetts, have already cut all extracurricular activities for 2010 after facing a $\$ 1.8$ million dollar deficit (Schworm \& Sweeney, 2010). Thus, the motivation for academic success for students like Jack, in schools similar to Mansfield High School, is in jeopardy.

But some parents, educators, coaches, and politicians, are against ending sports in schools because they believe kids like Jack need support. According to a poll taken by the Washington Post, $27 \%$ of the participants stated that sports programs, over any other program, are where students learn life and career skills (Matthews, 2009). The benefits from sports do not stop there. According to the New York Times, female participation in sports is "associated with all sorts of benefits, like lower teenage pregnancy rates, better grades and higher self-esteem"

[^0](Parker-Pope, 2010). The St. Petersburg Times in Tampa Bay Florida simply states, "It's rare to find examples where sports participation hinders academic success" (Gershman, 2002).

What actually does participation in sports do for a student? Does participation in sports help a student academically? Or are sports programs just another expandable expense for schools? How many students actually participate and reap the potential benefits of sports? In the following literature review, I organized current research focused on sports participation for students to attempt to answer the above questions.

## Literature Review

A lot of time and effort has been and continues to be invested in researching the effects of sport participation for students. The following literature review will organize the extensive research according to the following themes: Interscholastic Sports Participation vs. Extracurricular Activities, Potential Benefits of Sports for Students, and a closer look at the student athlete.

## Interscholastic Sports Participation vs. Extra Curricular Activities

When searching for the benefits of sport participation for students, researchers want to isolate sports from other extracurricular activities such as band, art, drama, etc. The reason for this separation is to note if there is any difference between non-athletic extracurricular activities and sports. In other words, do the two activities affect students in the same way? While Herbert Marsh (1993) found no correlation in his studies with sports and grades, A.F. Feldman and J.L. Matjasko (2007), Beckett Broh (2002), and Claudia Fox, Daheia Barr-Anderson, Dianne Neumark-Sztainer, and Melanie Wall (2010) did find a positive correlation between sports involvement and academic performance.

Marsh (1993) argues that participation in sports does not affect grades of student athletes or standardized test scores. Although no correlation could be found between grades and participation in sports, he did find that students who participated in extracurricular activities generally had higher grades, attended school more frequently, and were more likely to go to college (p. 40).

Feldman and Matjasko (2007) continued the investigation of extracurricular activities finding a positive correlation between sports participation and academic achievement, contradicting Marsh's (1993) findings. Their sample included six different categories in which $43.2 \%$ of students were involved in multiple activities, $22 \%$ of students were involved only in sports, $6.5 \%$ of students were involved in performance activities, $2.4 \%$ of students were involved in academic activities, $1.3 \%$ of students were involved in school-only activities (yearbook, student council, etc.), and $24 \%$ of students did not participate in any activity (Feldman \& Matjasko, 2007). Feldman and Matjasko (2007) found that the multiple activity participants had the highest grade point average out of all the other students and the non-participants of extracurricular activities had the lowest grade point average. Thus, they found that students who participate only in sports (a subset of those involved in multiple activities), had higher GPAs than students who did not participate in extracurricular activities. It is also important to note that in the multiple activity group, more students were engaged in sports than any other activity (Feldman \& Matjasko, 2007). Therefore, according to Feldman and Matjasko (2007), sports have some association with a higher GPA.

In accordance with Feldman and Matjasko (2007), Broh (2002) found that sports participation does improve a student's academic career. Broh's (2002) gut feeling is that sports inherently promote academic success since it involves "teaching characteristics, such as a strong
work ethic, respect for authority, and perseverance," and, "develops skills that are consistent with educational values and thus helps students to achieve" (Broh, p. 71). It was found that "participation in interscholastic [varsity and junior varsity] sports during both the $10^{\text {th }}$ and $12^{\text {th }}$ grades has small but consistent benefits for students' grades" (p. 76). He also found that interscholastic sports helped raise a student's self-esteem, increase the amount of time they spent on homework, and "increase social ties between students and parents, students and the school, parents and the school, and parents and parents" (p. 78).

The same effects that were seen in interscholastic sports are not seen in other extracurricular activities. First, intramural [non-school sponsored] sports and vocational clubs "actually lose academic ground relative to their non-participating peers" (Broh, 2002, p. 83). Furthermore, students who participate in cheerleading, school drama, student council, yearbook, and journalism, do not have improved grades compared to non-participating students (Broh, 2002). In fact, only participation in school music groups maintains the same improvement in academic success as interscholastic sports (Broh, 2002). Music, "with the exception of self esteem," is the only tested extracurricular activity that is similar to interscholastic sports (Broh, 2002, p. 84). Therefore, "while participation in cheerleading, school drama, student council, and the yearbook seem to be beneficial for some developmental characteristics and social relationships, none proves as consistently beneficial as music participation or, more so, interscholastic sport participation" (Broh, 2002, p. 84).

Similar to Broh's (2002) research, particularly how he compared intramural sports participation with interscholastic sports participation, Fox et al. (2010) studied the difference of GPAs between students who participated in individual physical activity to students who participated on organized sports teams. They found that middle school and high school boys and
girls who participated on sports teams all had higher GPAs than those who did not participate on a sports team (Fox et al., 2010). In addition, the more time a student invested in a sports team the greater the GPA that particular student tended to receive. Specifically, "high school boys participating on $0,1,2,3$ or more sports teams, their respective mean GPAs were $2.50,2.69$, 2.79 , and 2.94 " (Fox et al., 2010, p. 34). When comparing individual physical activity to sports team involvement, Fox et al.'s (2010) study only found high school girls benefit academically from increased individual physical activity. They rationalized that many students increase their GPA while participating on sports teams since "sports team participation fosters student identification with schools and school-related values, including performing well academically" (Fox et al., 2010, p. 35). In addition, Fox et al. (2010) states that "academic eligibility requirements... availability of academic tutoring... and differences in social norms regarding the importance of academic achievement" are all part of why students perform better academically in team sports rather than individual physical activity (p.36).

When looking at Marsh (1993), Feldman and Matjasko (2007), Broh (2002), and Fox et al. (2010), one can tell that there are mixed interpretations of sports and their contribution to academic success for students. Marsh (1993) found that although sports specifically did not improve a student's grades, extracurricular activities as a whole did help a student's grades, attendance, and college acceptance. Feldman and Matjasko (2007) concluded that students who participated in multiple activities had higher GPAs than students only participating in sports. Yet those who participate in sports had higher GPAs than students who did not participate in any extracurricular activity. Broh (2002) discovered that interscholastic sports over any other extracurricular activity benefits a student best in terms of academics. Along with Broh (2002), Fox et al. (2010) found that the more sports teams a student participates the more likely that
student will be successful academically. Fox et al. (2010) also found that most students perform better academically when the sport is associated with the school and is not an intramural sport. Therefore, three out of the four studies show a positive correlation between sports involvement and academic success.

## Benefits of Sports for Students

When studying sports involvement for students, researchers look to see how participation in sports affects students. Researchers analyze how sports participation affects grades, test scores, attendance, dropout rates, graduation rates, disciplinary measures, etc. The following articles focus on sports participation and how it affects a student's life. Roger Whitley's (1999) study draws the conclusion that athletes have greater success rates in a variety of areas. Hanson and Kraus (1998) find that only females benefit from sports participation. Contradicting Whitley's (1999) and Hanson and Kraus' (1998) study, Byrd and Ross (1991) show that there is no difference in athletes and non-athletes in the fields covered in their study. Robst and Keil (2000) takes Byrd's and Ross'(1991) findings one step further by showing that student-athletes have lower GPA's compared to non-athletes. And finally Rees' and Sabia's (2010) article takes the middle ground, stating that athletes have higher grades than non-athletes, yet cannot conclude this statement since they believe uncertainty still remains.

In his study Whitley (1999) compares student athletes to non-athletes by their GPA, attendance rate, amount of discipline referrals, dropout rate, and graduation rate. He found "athletes average GPA was $22.66 \%$ higher on the 4.0 scale than that of the non-athletes over the three year period" (Whitley, 1999, p. 225). In addition Whitley (1999) discovered that "athletes averaged missing a week and a day less than the non-athletes over the course of a school year...non-athlete groups missed twice as many days per year" (p. 225). In terms of discipline,
$30.51 \%$ of the athletes received a discipline referral, while $40.29 \%$ of the non-athletes received a discipline referral (Whitley, 1999). Looking at the dropout rate, only $2 \%$ of the athletes dropped out of school while $9.2 \%$ of non-athletes dropped out (Whitley, 1999). Finally "athletes had a $4.9 \%$ higher graduation rate than the non-athletes" (Whitley, 1999, p. 226). Whitley (1999) explains his results by stating that:
-athletes are motivated to perform at higher academic levels in order to remain eligible -athletic success may lead to a heightened sense of self-worth that spills over into academic performance -coaches, teachers, and parents take an interest in athletes, including their classroom performance -athletic participation may lead to membership in elite peer groups and an orientation toward academic success
-the athlete may have the hope or expectation of participating in athletics at the collegiate level (p. 227)

Despite the specific cause for such results found in Whitley's (1999) study, athletes are more likely to succeed than non-athletes.

Like Whitley's (1999) study, Hanson and Kraus (1998) found that sports participation improves a student's grades, yet in their study, academic success only came for females.
"Women, Sports, and Science" is a study by Hanson and Kraus (1998) that shows how female student athletes perform in science compared to females not involved in school sports. The study found that the former did have higher grades than the latter (Hanson \& Kraus, 1998). Moreover, the same study found that male student athletes did not get higher grades in science compared to males not involved in school sports (Hanson \& Kraus, 1998). And finally,
cheerleading had a negative impact on the grades in science for both males and females (Hanson \& Kraus, 1998). Thus, according to Hanson and Kraus, only female student athletes who participated in sports other than cheerleading will have a higher grade in science class.

Byrd's and Ross' (1991) study further puts in doubt Whitley's (1999) findings. Their study concludes that "academic performances of athletes and non-athletes were highly similar across all school grades and all subjects" (Byrd \& Ross, 1991, p. 176). Furthermore, "School attendance was generally similar for athletes and non-athletes, although the former had better attendance in seventh grade" (Byrd \& Ross, 1991, p. 176). And finally "attitudes toward school were similar for athletes and non-athletes" (Byrd \& Ross, 1991, p. 176). In essence, Byrd and Ross (1991) found that there were no noticeable differences between athletes and non-athletes. Interestingly enough, both adults and students stated that sports were a good thing for the school and that the benefits outweigh any disadvantage (Byrd \& Ross, 1991, p. 176). Yet despite the positive feelings towards sports, Byrd's and Ross' (1991) study indicates no benefit to the student.

Robst and Keil's (2000) study supports Byrd's and Ross' (1991) findings, in which sports participation does not improve a student's GPA. The results of the study indicate that student athletes have lower GPAs than non-athletes (Robst \& Keil, 2000). The study also found that when eliminating football and basketball, which are "revenue sports", student-athletes' GPA were almost the same as non-athletes, meaning football and basketball bring down the average GPA for student athletes (Robst \& Keil, 2000). Alternatively though, the study found that student-athletes were more likely to take more credit per year, have harder course loads, and graduate faster than non-athletes (Robst \& Keil, 2000). Therefore, lower grades do not paint the
whole picture on academic performance for student athletes since they are more productive in school than non-athletes.

With conflicting results from Whitley (1999) and Hanson and Kraus (1998) compared to Byrd and Ross (1991) and Robst and Keil (2000), Rees and Sabia (2010) take a more neutral approach. In their study, Rees and Sabia (2010) indicate athletes have a higher GPA than nonathletes and that the more an athlete participates in a sport the higher his or her grades will be However, when looking at the same results by gender, Rees and Sabia (2010) point out that there is, "little evidence in the table to support the claim that among males sports involvement affects the grades. However, the fixed effects estimates for females are occasionally positive and statistically significant" (Rees \& Sabia, 2010, p. 756). Rees and Sabia (2010) state, "Sports participation is associated with a $0.04-0.05$ point increase in GPA for females, but not males" ( p . 756). Furthermore, they conclude with a high degree of uncertainty stating "it is not clear if these correlations reflect causal relationships or are driven" (Rees \& Sabia, 2010, p. 750). Rees and Sabia (2010) are unsure whether the slight increase of GPA for athletes is due to the fact that they are athletes and are skeptical that there are unknown causes that may have altered their data.

Further study needs to be conducted in order to prove any of these researchers' findings. Studies listed above conflict with each other. Whitley (1999) states that athletes are more likely to have higher GPAs, go to school more, be disciplined less, have lower dropout rates, and have higher graduation rates. Hanson and Kraus (1998) state only females in science benefit academically from sports participation. Byrd and Ross (1991) contradict their findings and state that there is no difference between athletes and non-athletes in terms of grades, attendance, or attitude. Moreover, Robst and Keil (2000) state that GPA's for student athletes are lower than non-athletes. Rees and Sabia (2010) state that one cannot conclude their findings as accurate,
since there are possible underlying causes. Thus, with articles stating a case for athletics, against athletics, and unsure what benefit athletics have for a student it is obvious that the studies of the benefits of sports participation are unclear for students, at least when comparing these five articles.

## A closer look at the student-athlete

While many studies involving sports participation and its potential benefits for students compare athletes and non-athletes, the following two studies take a deeper look at the athletes themselves. For example, Deven Carlson and Leslie Scott (2005) not only compare non-athletes with athletes but they also compare different levels of participation in athletics. Todd Ryska (2003) also takes a closer look at athletes, but instead of grouping them into sub categories, he studies athletes' motivational orientation, athletic identity, and relative autonomy.

Carlson and Scott (2005) found that there are many differences between athletes in their study. For the purpose of their study, they grouped the athletes into three categories: elite, varsity, and junior varsity/intramural. Elite athletes are those who were either captains or the top scorers. Carlson and $\operatorname{Scott}(2005)$ found that there were more male athletes who were titled elite and more female athletes that were titled JV/Intramural. Next there were more African American elite athletes and more white varsity athletes (Carlson \& Scott, 2005). In addition, elite athletes were more likely to be involved in further extracurricular activities (Carlson \& Scott, 2005). Elite athletes also had the lowest test scores while varsity athletes had the highest test scores (Carlson \& Scott, 2005). After ten years, varsity and elite athletes "experienced greater educational labor and market success than non-athletes" while junior varsity/intramural athletes had less educational and labor market success compared to non-athletes (Carlson \& Scott, 2005). One can see that not all athletes are the same. Therefore, elite, varsity, and JV
athletes differ in percentage of male and female, race, test scores, and educational and occupational success.

Similar to Carlson and Scott (2005), Ryska (2003) takes a deeper look into his study of student athletes. The purpose of Ryska's (2003) study is to:

Discern the multivariate relationship between involvement variables and scholastic competence perceptions among high school student-athletes. The study was designed to assess the manner in which motivational orientation, sport confidence, athletic identity, and relative autonomy are related to athlete perceptions of academic, social acceptance, physical appearance, and behavioral conduct competence within the school setting. (p. 157).

In order to understand what Ryska (2003) is studying, a few terms need to be defined. He defines motivational orientation as how a student thinks of success, categorizing student athletes as either task-oriented or ego-oriented (Ryska, 2003). Task-oriented individuals "define success in terms of self-reference criteria...fulfillment of one's potential" (Ryska, 2003, p. 156). Egooriented individuals define success by comparing themselves to others (Ryska, 2003). Another term that needs to be discussed is athletic identity, which means: "The manner in which athletes perceive themselves within the academic realm is partly dependent on their identification with the athletic role" (Ryska, 2003, p. 157). Thus, how an athlete identifies with himself or herself may have an impact on their academic success. The last term that needs to be addressed is 'relative autonomy' which is the "self-regulatory behavior athletes engage in to satisfy their need to feel competent" (Ryska, 2003, p. 157).

Ryska (2003) found that "male student-athletes who were high task-oriented, low egooriented, highly identified with the school social aspect of their athletic role, and relatively
autonomous in their sport involvement" had better grades and overall behavior compared to male student-athletes who were "high ego-oriented, exclusive athletic identity, and lower behavior autonomy" (Ryska, 2003, pp. 162-163). Female student-athletes followed the same pattern as male student-athletes with Ryska's (2003) multivariate analysis in terms of grade and behavior. He concludes his article with the argument that schools and studies need to look closer at each athlete instead of treating them as a whole. "In terms of describing relationship between sport involvement and scholastic competence perceptions, it appears more important to understand how athletes are motivated, how they identify with sport, and how self-determined they are in sport," instead of treating athletes as a whole (Ryska, 2003, p. 165).

After looking at Carlson and Scott (2005) and Ryska (2003), one can see that all athletes are not alike. Carlson and Scott (2005) found that elite athletes were primarily black, male, had lower test scores and were more successful educationally and occupationally. Varsity athletes, like elite athletes were successful educationally and occupationally, but were more likely to be white and have higher test scores. Junior varsity/intramural athletes were mostly female and were the least likely to have successful educational and occupational futures compared to elite and varsity athletes. And Ryska (2003) found that student-athletes who were task-oriented, not solely athletic identity, and autonomous in sport involvement were more likely to have success academically and behaviorally.

Research on sports participation for students can vary from looking at how gender is related to academic performance to how a student-athletes' motivation and identity affects their academic success. Although these studies vary significantly in what they study and their findings, all the studies look at sports participation compared to academic success. Some studies, including Broh (2002), Hanson and Kraus (1998), Whitley (1999), Feldman and

Matjasko (2007), Carlson and Scott (2005), and Fox et al. (2010), found that sports participation contributed to academic success. Other studies, such as Robst and Keil (2000), Byrd and Ross (1991), and Marsh (1993), state that sports participation does not cause academic success and perhaps decreases a student-athlete's GPA. The following research questions will attempt to clear up some uncertainty posed by the current dialog surrounding sports participation and academic success.

## Research Question

After this literature review on sports participation and how it affects students, one can see that results from previous studies conflict with one another. Some studies show a strong correlation with sports participation and academic performance while other studies show no relation at all. The purpose of this study is to attempt to clarify the correlation between sports participation and academic performance. The primary research question which is at the heart of this study is: Does participation in high school sports improve a student's GPA compared to students who are non-athletes? Secondary questions include: Does a student-athlete's GPA change while he or she is not participating in a sport? Do particular sports increase a student's GPA while other sports do not? Does the level of student athlete (Varsity/Junior Varsity) have an effect on a student's academic success? What is the overall impression of students, teachers, and coaches about sports participation?

## Methodology

## Method and Rationale

This project employed a mixed-method approach, using both qualitative and quantitative methodologies. When comparing qualitative to quantitative research, one can see that each approaches the research project from two different angles. According to Hendricks, a
qualitative study is an "analysis of artifacts, observations, interviews. Interpretations of data help to understand the phenomenon under study" (Hendricks, 2009, p.4). Qualitative research collects surveys and takes opinions of the people involved in the study and organizes the results to construct a conclusion. In comparison, a quantitative study collects numerical data and compares the results so that, "broad generalizations can be made based on the outcome of the study" (Hendricks, 2009, p.4). Thus, quantitative research takes numbers, analyzes them, and develops a conclusion based on the overall findings. Both research methods will be useful in this particular study. The qualitative research will help answer why subjects in the study performed the way they did, producing the numbers observed in the quantitative research.

## Sample

The data for this study included students, teachers and coaches from Avalon High School during the 2010-2011 academic school year. The students from the study are freshman, sophomores, juniors, and seniors. GPAs for students were collected from Avalon High School through the athletic department for student athletes (742 students) and the registrar's office for all students ( 1673 students). It is necessary to compare data from these two sources so that one can see the differences in academic performance from student athletes and non-athletes. In addition, a survey was passed out to a sample survey group of 114 history students (three Washington State History classes, one AP US History class, and one US History class). The survey attempted to categorize students based on grade, gender, GPA, sport participation, and student opinions of sport participation. Furthermore, the survey identified grades of student athletes while they were participating in a sport to grades when they were not participating in a sport. It was necessary to survey these students since the data obtained helped triangulate the data collected from the school's records, further clarifying the data, so a conclusion can be
reached. Teachers and coaches ( 37 total) from Avalon High School were also surveyed to see what their overall feelings of sports participation were when tied with academic success. Teachers' and coaches' survey results further help clarify the results from the students' GPAs since they provided their academic experience and observations of non-athletes and athletes in the classroom.

## Instrumentation

In this research project, I collected GPAs from the school's registers and athletic office and surveys of students and teachers/coaches to determine whether sports participation for students increases academic success. Individual groups within the sample student population were compared to see if sports participation affects one particular group differently than the other. In this comparison, multiple factors were taken in consideration. First, gender was looked at to see whether or not males, females, or both benefit from sports participation. Second, grade level was also accounted for when analyzing the results. Third, student athletes' grades were watched to determine if GPAs differ when they are participating in a sport compared to when he or she is not. Fourth, different sports teams were observed to see if particular sports improve or hinder a student's GPA. Finally, the overall attitude that students, teachers, and coaches have towards sports participation affecting students academically were noted.

In order to accomplish the above comparisons and questions, information was gathered from the athletic department and registrar's office. Avalon High School, in which the study takes place, has records of student athletes' GPA while participating in a sport for each sports team and records of the entire student body's GPA. All information obtained was grouped by theme and not by student name.

Data was also collected from anonymous surveys passed out to the 114 students and the 37 teachers/coaches. Before surveys were administered, permission was asked for and received from both the Human Subjects Review Board and the Avalon High School administration staff in order for students and staff to participate in this research project. When the surveys were ready to be distributed they were be given to the students at the beginning of each period. Students were given between approximately five minutes to complete the surveys. When students completed their survey they turned it in to the front of the room. Teachers/coaches surveys were passed out via their boxes found in the office. Teachers/coaches were asked to return their completed survey to a designated teacher box within five school days.

The survey for student is as follows:

1) Gender: $M / F$
2) Grade level: Sophomore Junior Senior
3) Do you participate in sports: Yes / No
4) If so, what sport(s):
5) If so, what level (circle all that apply): JV V Other
6) What grades do you usually get: A B C D F
7) What was your GPA from first semester this year (2010):
8) What do you think your GPA for second semester will be this year (2011): $\qquad$
9) Does participation in school sports motivate you academically? YES NO MAYBE
10) Does participation in school sports hurt your academic success? YES NO MAYBE
11) In your experience do student-athletes perform better academically when compared to non-athletes? YES NO MAYBE NO CORRELATION
12) What would happen if sports were cut from this school? (circle all that apply) -average GPA would drop -average GPA would rise -no GPA change -higher absent rates -lower absent rates -no absent change -higher graduation rate -lower graduation rates -no graduation rate change -more school spirit -less school spirit -no change in school spirit -better academic environment -worse academic environment -no change in academic environment
13) On a scale from 1-10, how would you rate the importance of sports participation for students, with 1 being not at all and 10 being the most important thing?

The survey for the teacher/coach is as follows:

1) Have you ever coached before: YES NO
2) If you have coached, what sports: $\qquad$
3) In your experience do student-athletes perform better academically when compared to non-athletes? YES NO MAYBE NO CORRELATION
4) What would happen if sports were cut from this school? (circle all that apply)

| -average GPA would drop | -average GPA would rise | -no GPA change |
| :--- | :--- | :--- |
| -higher absent rates | -lower absent rates | -no absent change |

-higher graduation rate -lower graduation rates -no graduation rate change
-more school spirit -less school spirit -no change in school spirit
-better academic environment
-worse academic environment -no change in academic environment
4) On a scale from 1-10, how would you rate the importance of sports participation for students, with 1 being not at all and 10 being the most important thing?

## Analysis/Validity

The data collected from the school regarding the GPA of student athletes and of the entire school was compared. Numerical analysis, such as counting, comparing, and graphing was conducted to see whether sports participation affects a student's GPA. Furthermore, data from the surveys were analyzed to find themes pertaining to sport participation and academic success. Gender, class year, active sport enrollment, grades, type of sport, and attitudes towards sports participation are all themes that were closely reviewed. The analysis attempted to take these themes and find any relationships that would link sports participation to students' academic performance. Teacher and coaches' surveys were also reviewed to determine how they believe sports participation affects students. Patterns were sought out to see if teachers who are also coaches and those who are just teachers differ in their responses toward sports participation and academic success.

As a researcher of this topic, I come to this project with a bias, believing sports participation in high school improves academic performance, since I come with personal experience of sports helping students academically. I eliminated my bias while conducting this research by reporting on the data collected honestly and by triangulating the results for accuracy. For example, while the survey asks students to report their GPA, I further obtain school records of the student's GPA to make sure their responses' are accurate. Moreover, I included options in the surveys that allow students, teachers, and coaches the ability to choose for, against, or no opinion on sports participation.

## Data

The data collected in this research can be divided into two categories. The first category is GPA records obtained from the school. The second category is the results from the surveys collected from both students and teachers/coaches.

## GPA Results

GPA records were obtained from two different sources at Avalon High School. Student athlete GPA records were acquired from the athletic department and the entire student body GPA records were acquired from the registrar's office. The records for student athletes were separated by sports team. Individual GPAs were given and categorized under each sport team. No names were given with the results. Individual GPAs were then averaged out to show the average GPA for each sport team. The following tables show the sports students participate in at Avalon High School, the average GPA for each sports team, and the number of participants for each sports team. Table 1 shows just male records, Table 2 shows female records, and Table 3 combines the results given in Table 1 and 2 to show student athlete GPA's at Avalon High School.

Table 1
Male Student Athlete GPA

| Men | GPA | \# of <br> Participants |
| :--- | ---: | ---: |
| Baseball | 3.253 | 32 |
| Basketball | 3.188 | 36 |
| Cross Country | 2.968 | 19 |
| Swim/Dive | 3.255 | 16 |
| Tennis | 3.179 | 29 |
| Football | 2.766 | 121 |
| Golf | 3.142 | 14 |
| Soccer | 2.850 | 45 |
| Track and Field | 3.060 | 86 |
| Wrestling | 2.827 | 62 |

$\begin{array}{lll}\text { Average GPA } & 3.049 & \begin{array}{l}\text { Total } \\ \text { Number }\end{array}\end{array}$

Table 2
Female Student Athlete GPA

| Girls | GPA | \# of <br> Participants |  |
| :--- | ---: | :--- | :--- |
| Basketball | 3.443 | 33 |  |
| Cross Country | 3.489 | 18 |  |
| Soccer | 3.272 | 55 |  |
| Swim/Dive | 3.476 | 13 |  |
| Volleyball | 3.521 | 37 |  |
| Golf | 3.369 | 13 |  |
| Softball | 3.056 | 23 |  |
| Tennis | 3.480 | 35 |  |
| Track and Field | 3.334 |  | 55 |
|  |  |  |  |
|  |  |  |  |
|  |  | Average GPA |  |
|  |  | 3.382 | $\underline{\text { Number }}$ |

Table 3
Student Athlete GPA (combine female and male)

|  |  | GPA |  | Participants |
| :---: | :---: | :---: | :---: | :---: |
| Basketball |  | 3.316 |  | 69 |
| Cross Country |  | 3.229 |  | 37 |
| Soccer |  | 3.061 |  | 100 |
| Swim/Dive |  | 3.366 |  | 29 |
| Golf |  | 3.256 |  | 27 |
| Tennis |  | 3.330 |  | 64 |
| Track and Field |  | 3.197 |  | 141 |
| Baseball |  | 3.253 |  | 32 |
| Softball |  | 3.056 |  | 23 |
| Football |  | 2.766 |  | 121 |
| Wrestling |  | 2.827 |  | 62 |
| Volleyball |  | 3.521 |  | 37 |
|  | Average GPA | 3.215 | Total Number | 742 |

The second source of GPA records was provided by the registers office. The data shows the average GPA records from the entire student body. The results are broken up by grade, showing
the number of students in each grade level. The grade report was completed through Progress report 4, which was taken May, $10^{\text {th }} 2011$.

Table 4
Cumulative GPA through Progress 4 (5/10/11) for Avalon High School

| Grade | GPA | Number of Students |
| :--- | :--- | :--- |
| Seniors (2011) | 2.724 | 431 |
| Juniors (2012) | 2.709 | 417 |
| Sophomores (2013) | 2.727 | 387 |
| Freshman (2014) | 2.795 | 438 |

Cumulative Average for all grades combined is 2.739 .
Total Students: 1673

Figure 1 combines the data from Tables 3 and 4 to provide a comparison between the GPA average of student athletes and the GPA average of the entire school.


Figure 1. Cumulative GPA Scores at Avalon High School
With the numbers provided in Table 3 and Table 4: student athletes GPA $=3.215$ and the entire school GPA $=2.739$, the GPA of non athletes was determined to be 2.265 .

Both teachers and students were given surveys. Teacher and students surveys vary slightly and therefore the results from the surveys will be separated. For the teacher survey, participants were asked a variety of questions that ask the participants their opinion on how sports affect students. The following table shows the results from the teacher survey.

Table 5
Teacher Survey
Teacher Survey Total

| Have you coached before? | Yes | No |  |  | Blank |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 19 | 18 |  |  | 0 |
| Do student athletes perform better |  |  |  | No |  |
| academically? | Yes | No | Maybe | Correlation | Blank |
|  | 13 | 2 | 14 | 4 | 4 |
|  |  |  | no |  |  |
| If sports were cut GPA average would | Drop | Rise | change |  | Blank |
|  | 15 | 3 | 5 |  | 14 |
|  |  |  | no |  |  |
| If sports were cut absent rates would | Rise | Drop | change |  | Blank |
|  | 19 | 3 | 4 |  | 11 |
|  |  |  | no |  |  |
| If sports were cut graduation rates would | Rise | Drop | change |  | Blank |
|  | 0 | 18 | 3 |  | 16 |
|  |  |  | no |  |  |
| If sports were cut school spirit would | Rise | Drop | change |  | Blank |
|  | 0 | 32 | 0 |  | 5 |
| If sports were cut academic environment would |  |  | no |  |  |
| be | Better | Worse | change |  | Blank |
|  | 4 | 14 | 3 |  | 16 |
| Importance of sports Participation for students | one | two | three | four | five |
|  | 0 | 0 | 0 | 0 | 3 |
|  | six | seven | eight | nine | ten |
|  | 7 | 12 | 8 | 3 | 2 |

The student survey asked similar questions as the teacher survey. However instead of asking "If you have coached before?" the student survey asks for gender, grade level, grades,
whether they participate in sports and how does sports participation affect them academically.
The following table shows the results of the student surveys.
Table 6
Student Survey

| Gender | Male | Female | Total | - | - | blank |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 63 | 51 | 114 |  |  | 0 |
| Grade Level | Freshman | Sophomore | Junior | Senior | - | blank |
|  | 71 | 3 | 37 | 3 |  | 0 |
| Participation in Sports | Yes | No | - | - | - | blank |
|  | 63 | 48 |  |  |  | 3 |
| Sports Motivate you academically? | Yes | No | Maybe | - | - | Blank |
|  | 45 | 36 | 22 |  |  | 11 |
| Sports hurt your academic success? | Yes | No | Maybe | - | - | Blank |
|  | 13 | 61 | 27 |  |  | 13 |
| Do student athletes perform better |  |  |  | No |  |  |
| academically? | Yes | No | Maybe | Correlation | - | Blank |
|  | 33 | 19 | 38 | 19 |  | 5 |
| If sports were cut GPA average would | Drop | Rise | $\begin{gathered} \text { no } \\ \text { change } \end{gathered}$ | - | - | Blank |
|  | 42 | 23 | $\begin{aligned} & 27 \\ & \text { no } \end{aligned}$ |  |  | 22 |
| If sports were cut absent rates would | Rise | Drop | change | - | - | Blank |
|  | 37 | 24 | 24 |  |  | 29 |
| If sports were cut graduation rates |  |  | no |  |  |  |
| would | Rise | Drop | change | - | - | Blank |
|  | 12 | 36 | 37 |  |  | 39 |
| If sports were cut school spirit would | Rise | Drop | $\stackrel{\text { no }}{\text { change }}$ | - | - | Blank |
|  | 3 | 99 | 6 |  |  | 6 |
| If sports were cut academic |  |  | no |  |  |  |
| environment would be | Better | Worse | change | - | - | Blank |
|  | 16 | 40 | 27 |  |  | 31 |
| Importance of sports Participation for |  |  |  |  |  |  |
| students | one | two | three | four | five | six |
|  | 3 | 0 | 3 | 3 | 10 | 12 |
|  | seven | eight | nine | ten | - | Blank |
|  | 22 | 28 | 16 | 16 |  | 1 |

Under the Appendix, Table A and Table B show the results of the student survey separating the results by gender. In addition to the information provided in Table 6, Table 7 takes data from the student surveys and shows how sports involvement affects student athletes academically while in sports and while not in sports. In order to calculate such results, the sport(s) the student was involved in was compared to their first and second semester grades. For example if a student participated only in cross country and had a 3.5 GPA in first semester and a 3.4 GPA second semester then the result would indicate an increase in GPA while in sports, since cross country is held during first semester. Students who participated in multiple sports that spanned both first and second semesters would place under the fourth column. If a survey is missing either the GPA scores for first and second semester or sports team involvement, then the survey was placed under the "no answer" column.

Table 7
The change in GPA Scores for Student Athletes: Participation vs. Non-Participation GPA increase while in Sports 5 students

GPA decrease while in Sports............................... 4 students
No change in GPA.............................................. 7 students
Participates in Sports $1^{\text {st }}$ and $2^{\text {nd }}$ semester................ 25 students
No answer provided........................................... 22 students

## Analysis

GPA Results
Table 3 shows that the average GPA for a student athlete at Avalon High School was a
3.213. Female student athletes raised the average GPA for student athletes since the average GPA for female student athletes was 3.382 (Table 2). Consequently male student athletes lowered the average GPA student athletes since male student athletes had a 3.044 average GPA
(Table 1). Thus female student athletes have a higher GPA by over 0.3 points compared to males. The sports team with the lowest GPA average was football (all male) with a 2.766 and the sports team with the highest GPA average was volleyball (all female) with a 3.521 (Table 3). The highest GPA for a coed sports team was swim and dive with a 3.366 (Table 3). The highest GPA for a male sports team was swim and dive with a GPA of 3.255 (Table 1) and the lowest GPA for a female sports team was softball with a 3.056 (Table 2). Based off the above findings female student athletes have higher GPAs than males and that volleyball produced the highest GPA average than any other sport at Avalon High School, while football produces the lowest GPA average. For the most part however sports teams have relatively similar GPA results hovering around a 3.2 GPA and therefore no significant findings show that a particular sports team had a higher GPA than another. The difference in GPA by gender seem to be the most significant information present.

The student athletes GPA average can be compared with the entire school. The student athletes GPA average was 3.213 (Table 3) where as the GPA average for the entire student body was 2.739 (Table 4). Therefore student athletes have a .474 higher GPA average than the entire school. Yet student athletes contribute to over $44 \%$ of the student body and therefore raise the GPA average of the entire school (Table 3 and Table 4). To compare student athletes then to non-athletes the following graph (Figure 2) shows that student athlete GPA is 3.215 where as the GPA for non-athletes is a 2.265 . Thus student athletes have a GPA that is .948 higher than nonathletes. Based on the above finding it is obvious that student athletes on average have a higher GPA than non-athletes.


Figure 2. Cumulative GPA at Avalon High School

## Survey Results

The purpose of the survey is to see how sports participation affects students at Avalon High School. One of the first questions asked targets student athletes to see if sports participation motivates them academically. The following graph (figure 3) shows how the 63 student athletes surveyed felt about sports motivating them academically.


Figure 3. For Student Athletes: Does Sports Participation Motivate You Academically?
Figure 3 shows that 38 student athletes ( 12 girls/ 26 boys) believe that sports motivate them to perform better academically where as only 11 student athletes ( 6 girls / 5 boys) felt that sports did not motivate them academically. 15 students ( 7 girls/ 8 boys) thought that sport maybe motivates them academically. Out of the students surveyed it is clear that sports motivate students academically, especially for males.

In addition student athletes and non-athletes were asked whether they felt that sports hurt their academic success, since sports require extra time outside of school that could be used for studying and homework. The following graph (Figure 4) shows the given results.


Figure 4. Does Sports Participation Hurt You Academic Success?
Figure 4 shows that 14 students said that sports participation hurt their academic success while 61 students said no, 27 students said maybe, and 13 students did not have an answer. These results indicate that $54 \%$ of the students surveyed do not believe that sports participation hurts their academic success. Only $11 \%$ students stated that sports hurt their academic success and $24 \%$ of the students were unsure if sports participation hurt their academic success. $11 \%$ of the students' survey did not provide an answer since they did not participate in sports. Thus it is obvious that a majority of students feel sports do not hurt their academic success.

The rest of the questions asked to students, were also asked to teachers; therefore the results from each question will be provided on the same graphs. Figure 5 shows the results on whether teachers and students at Avalon High School believe that student athletes perform better academically.


Figure 5. Do Student Athletes Perform Better Academically Compared to Non Student

## Athletes?

Figure 5 shows mixed results. A majority of the students and teachers think that student athletes maybe perform better academically when compared to non-athletes. However the most significant data from this graph shows that only 2 teachers (5\%) and 19 students (16\%) think that student athletes do not perform better academically compared to non-athletes. Thus there is a very small population of the participating students who think student athletes do not perform the best academically in class. This data makes sense especially when referring to the GPA records from Avalon High School were student athletes average almost a whole grade point higher than non-athletes.

Teachers and students were also asked a series of questions asking what would happen to Avalon High School if sports were cut due to lack of funding. Figure 6 shows the opinion teachers and students have on the GPA change.


Figure 6. If Sports Were Cut, GPA Average Would:
Again like Figure 5 the results seem to be somewhat mixed. Out of the participants who answered the question a majority of teachers and students believe that if sports were cut then GPA averages would fall. This data makes sense since a large majority of student athletes felt that sports motivated them academically (Figure 3). Therefore if sports were cut, student athletes would not have the motivation to perform academically and thus GPA would naturally drop.

The next question asks teachers and students what would happen to the absent rate if sports were cut. Part of academic success comes from whether or not a student is in class. Generally speaking the more a student is in class the more likely he or she will learn something. The following graph displays the opinions of teachers and students on how sports affect absent rates.


Figure 7. If Sports Were Cut, Absent Rates Would:
Figure 7 shows that out of the teachers and students who answered more think that absent rates would rise if sports were cut. Looking back at Figure 3, it shows that $60 \%$ of the student athletes believed that sports motivated them academically. Part of this motivation can be contributed to going to school. At Avalon High School if a student is absent from a day of school, then that student is unable to compete or practice with the team that day. Since sports motivate students it then makes sense that more teachers and students feel absent rates would rise if sports were cut.

Teachers and students were also asked what would happen to Avalon High School's spirit if sports were cut. The following graph shows teachers and students opinion on how sports and school spirit are related.


Figure 8. If Sports Were Cut From School Funding, School Spirit Would:
Overwhelmingly teachers and students believe there is a direct connection to school spirit and sports. $100 \%$ of the teachers and $92 \%$ of the students who answered stated that school spirit would drop if sports were cut from Avalon High School. These numbers are not hard to believe after spending a semester at Avalon High School and attending athletic events. Teachers and students alike are passionate about sports and at Avalon High School there are announcements regularly and a few assemblies celebrating athletics at Avalon High School. Perhaps it is this sense of school spirit that motivates some students to perform at their highest academic potential. More research would need to be conducted to prove the connection of school spirit and academic success.

Finally teachers and students were asked to rate the importance of sports participation for students when one is the lowest and ten is the highest. The following graph shows the results on how teachers and students rate the importance of sports for students at Avalon High School.


Figure 9. Importance Of Sport Participation For Students
A quick look at Figure 9 shows that both teachers and students value sports at their school. $72 \%$ of the students and $71 \%$ of teachers gave a rating of 7 or higher for the importance of sports for students.

The survey taken from the students also asked their GPA for first and second semester. These GPAs were analyzed to see if student athletes have a higher GPA while in sports than while not in sports. The results of this data provide no evidence that GPAs are higher or lower while students participate in sports. The reason why the evidence is not usable was due to the fact that nearly $75 \%$ of the students athletes either participate in multiple sports and thus are in a sport both first and second semester or did not provide grades in the survey. Thus it is impractical to base any valid information off just 16 student athletes.

## Recommendations

Notice the results from this research project clearly point out that student athletes have a higher GPA average than non-student athletes and that sports motivate students academically. Yet despite these facts, the study still lacks the evidence that proves that sports contribute directly to the student athletes' academic success. One can still argue that the reason student athletes perform better academically is due to the fact that student athletes are highly motivated individuals who like to occupy their time with activities, such as sports. In order to prove that sports participation directly affects a student's academic success, research needs to be done on the individual and compare a student's grades while in sports and while not in sports. Table 7 attempted to show the relationship between GPA average while in sports compared to while not in sports, but due to the small sample the results have no value. Thus to perform this research accurately, schools and students must allow the researcher to view their academic records. Also the researcher must have a large sample of students to ensure the data collected is accurate.

## Conclusion

Although this study did not state that sports directly contribute to a student athlete's academic success, the research did indicate an importance for sports in high schools. The results from this research project indicate that students who participate in sports are more likely to have a higher GPA than those who do not participate in sports. On average more students are motivated academically because of their involvement with sports. Because of this motivating factor that sports give to students, student athletes are believed to attend school more frequently and there is an increase amount of school spirit.

Remember Jack? He is a student athlete trying to go to school during a recession. Everything is fine for Jack, unless his school decides to cut sports funding to save money. If
sports are cut Jack is more likely to miss class, have lower grades, and not graduate (Whitley,
1999). With sports being cut, his academic career and future could be in jeopardy. It is important for schools to continue to fund sports programs for students like Jack. The best way to argue for sports funding in schools is to have research to back it up.

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## Appendix

Table A
Male Student Survey

| Gender | Male | Female | - | - | blank |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 63 | 0 |  |  | 0 |
| Grade Level | Freshman | Sophomore | Junior | Senior | blank |
|  | 45 | 1 | 15 | 2 | 0 |
| Participation in Sports | Yes | No | - | - | blank |
|  | 38 | 23 |  |  | 2 |
| Sports Motivate you academically? | Yes | No | Maybe | - | Blank |
|  | 29 | 17 | 10 |  | 7 |
| Sports hurt your academic success? | Yes | No | Maybe | - | Blank |
|  | 5 | 36 | 15 |  | 7 |
| Do student athletes perform better |  |  |  | No |  |
| academically? | Yes | No | Maybe | Correlation | Blank |
|  | 17 | 12 | 21 | 11 | 2 |
|  |  |  | no |  |  |
| If sports were cut GPA average would | Drop | Rise | change | - | Blank |
|  | 25 | 10 | 15 |  | 13 |
|  |  |  | no |  |  |
| If sports were cut absent rates would | Rise | Drop | change | - | Blank |
|  | 19 | 12 | 16 |  | 16 |
|  |  |  | no |  |  |
| If sports were cut graduation rates would | Rise | Drop | change | - | Blank |
|  | 5 | 18 | 19 |  | 21 |
|  |  |  | no |  |  |
| If sports were cut school spirit would | Rise | Drop | change | - | Blank |
|  | 0 | 55 | 2 |  | 6 |
| If sports were cut academic environment |  |  | no |  |  |
| would be | Better | Worse | change | - | Blank |
|  | 9 | 23 | 16 |  | 15 |
| Importance of sports Participation for |  |  |  |  |  |
| students | one | two | three | four | five |
|  | 1 | 0 | 3 | 0 | 6 |
|  | six | seven | eight | nine | ten |
|  | 5 | 15 | 14 | 10 | 9 |

Table B
Female Student Survey

| Gender | Male | Female | - | - | - | blank |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0 | 51 |  |  |  | 0 |
| Grade Level | Freshman | Sophomore | Junior | Senior | - | blank |
|  | 26 | 2 | 22 | 1 |  | 0 |
| Participation in Sports | Yes | No | - | - | - | blank |
|  | 25 | 25 |  |  |  | 1 |
| Sports Motivate you academically? | Yes | No | Maybe | - | - | Blank |
|  | 16 | 19 | 12 |  |  | 4 |
| Sports hurt your academic success? | Yes | No | Maybe | - | - | Blank |
|  | 8 | 25 | 12 |  |  | 6 |
| Do student athletes perform better |  |  |  | No |  |  |
| academically? | Yes | No | Maybe | Correlation | - | Blank |
|  | 16 | 7 | 17 | 8 |  | 3 |
|  |  |  | no |  |  |  |
| If sports were cut GPA average would | Drop | Rise | change | - | - | Blank |
|  | 17 | 13 | 12 |  |  | 9 |
|  |  |  | no |  |  |  |
| If sports were cut absent rates would | Rise | Drop | change | - | - | Blank |
|  | 18 | 12 | 8 |  |  | 13 |
| If sports were cut graduation rates |  |  | no |  |  |  |
| would | Rise | Drop | change | - | - | Blank |
|  | 7 | 18 | 8 |  |  | 18 |
| If sports were cut school spirit would | Rise | Drop | $\stackrel{\text { no }}{\text { change }}$ |  |  | Blank |
|  | 3 | 44 | 4 | - | - | 0 |
| If sports were cut academic environment |  |  | no |  |  |  |
| would be | Better | Worse | change | - | - | Blank |
|  | 7 | 17 | 11 |  |  | 16 |
| Importance of sports Participation for |  |  |  |  |  |  |
| students | one | two | three | four | five | six |
|  | 2 | 0 | 0 | 3 | 4 | 7 |
|  | seven | eight | $\underline{\text { nine }}$ | ten | - | Blank |
|  | 7 | 14 | 6 | 7 |  | 1 |


[^0]:    ${ }^{1}$ A fictional character
    ${ }^{2}$ A fictional name for a school to protect identity of the original school

