

Athletics and the Classroom: The Effect of Participation in School-Sponsored Sports on
Academic Achievement and Perception of Classroom Work Habits

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Abstract

The purpose of this research was to determine whether participation in school-sponsored sports was related to academic achievement, classroom work habits and students' perceptions related to their courses and achievement. A survey was completed by 126 high school students whose second marking period grade point averages were accessed from school records. The investigator, a high school teacher and coach, compared self-report data regarding students' decisions to play or not play a winter sport, athletes' beliefs about whether their participation in sports affected their academic achievement, and all students' perceptions of their classroom work habits and academic choices. The results indicated that student athletes' mean grade point average was statistically significantly higher than that of the non-athletes. Student athletes also rated some of their classroom work habits as more diligent or rigorous than did non-athletes on average. Future research might inquire further about the motivations of student athletes in terms of course selection and work habits and how these further affect their options to participate in other activities, and how such participation affects their course selection and work habits.

CHAPTER I

INTRODUCTION

Overview

This study was designed to explore how participation in high school-sponsored sports is related to grades and may play a role in student athletes' academic lives. Many studies have found positive correlations between participation in sports and academic achievement (Fox, Barr-Anderson, Neumark-Sztainer & Wall, 2010; Fredericks, 2012; Jonker, Elferink-Gemser & Visscher, 2009; Kim, 2014; Lipscomb, 2007), and between students' participation in sports and their perceptions about their own achievement (Barnett, 2007; Denault, Poulin & Pedersen, 2009; Kronholz, 2012; Pearson, Crissey & Riegler-Crumb; 2009). Student participation on school sports teams has been associated with improvement in students' grades, self-concept, social development, and feelings of connectedness to school. Often, however, these relationships were weak or had many possible explanations that were left unexplored by the investigators. Participation in sports and academic achievement may be related in complex ways which simple correlations or comparisons fail to explain.

The researcher, who taught at a comparatively small high school in Anne Arundel County, Maryland and coached a fall season sport, observed differences in classroom behavior and grades between students who participated in sports and those who did not. Those students who were a part of a sports team appeared more concerned about and dedicated to their academic achievement than many of the non-athletes. The investigator also observed that once the fall sports season ended, the fall student athletes who did not participate in a winter sport appeared to suffer declines in their grades and classroom work habits. The researcher speculated that being a

part of a team provides students with motivation to succeed that non-athletes may not experience.

Statement of the Problem

The purpose of this research was to determine whether participation in school-sponsored sports is related to academic achievement or students' perceptions related to their courses, work habits, or achievement.

Statement of the Hypothesis

Participation on a school-sponsored sports team is not related to students' academic performance or perceptions of their academic performance.

ho₁: Mean grades for students playing a winter sport = Mean grades for students not participating in a winter sport.

ho₂: Mean perceptions of classroom work habits for students playing a winter sport = Mean perceptions of classroom work habits for students not participating in a winter sport.

Operational Definitions

In this study, the independent variable was the level of participation on a sports team in the winter season.

The dependent variables were students' grade point average in the second marking period and their perception of their performance in classes during the same marking period.

For purposes of this study, the following operational definitions apply.

Academic Achievement: For purposes of this study, academic achievement was measured by students' grade point averages in the second marking period. The students' achievement is reported as percentages across all courses.

Course Selection, and Perceptions of Classroom Work Habits and Achievement: Students' academic course selection, work habits, and perceptions about their achievement and how these choices were affected by their participation or lack of participation in sports were assessed using a survey created by the researcher.

Marking Period: The second marking period was 47 days in length. Students received a report card at the end of each marking period. The second marking period coincided approximately with the winter athletic season.

School-Sponsored Sports: School-sponsored sports were defined as after-school athletic activities which were sponsored the school. In the district studied, there were three sports seasons: fall, winter, and spring, with a variety of varsity, junior varsity, girls and boys teams. The majority of teams held tryouts and made cuts to the team. However, there were a select few (including unified sports teams that were open to all students, regardless of physical and cognitive ability level) that did not make cuts. This was accounted for in the survey described above.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Although there are many different activities in which students can participate at the high school level, sports are particularly popular and likely to have the potential to play a large role in a high school student's educational career, especially with regard to academic achievement. Student athletes decide to play and dedicate much time to sports during as many as three seasons each school year. Participation may affect success in school in a variety of ways. Specific academic requirements for participation on various teams often are one of the factors affecting how school-sponsored sports relate to students' academic achievement. However, there could be other factors that affect student athletes' academic performance (Fox et al., 2010; Fredericks, 2012; Jonker et al., 2009; Kim, 2014; Lipscomb, 2007). Student athletes' self-concept and feelings of connectedness to school due to participation in sports may affect their academic achievement as well (Barnett, 2007; Bradley, Keane, & Crawford, 2013; Pearson et al., 2009). School-sponsored sports play a significant role in the lives of many students, and it is beneficial for educators to understand if and how participation in them relates to academic achievement.

The first section of this literature review discusses the differences between the types of activities in which students can participate and their influence on students. The second section focuses on the impact of school-sponsored sports on students' sense of self and their relationships to school. The third section reviews how participation in sports affects academic achievement. The final section outlines factors which influence students' ability to participate in extracurricular options, including sports.

Demands and Benefits of School-Sponsored Sports

Academic activities, performing and creative arts clubs, school-sponsored sports, and groups that meet outside of or are unaffiliated with the school are among the many activities in which students can participate during after school hours. Many of these clubs or activities have potential benefits for students' development and education (Simpkins, Eccles, & Templeton, 2008). For example, research such as that conducted by Lipscomb (2007) suggests that if students join a club with other successful peers, that peer group will encourage development of positive habits that are directly correlated with the students' attainment of higher degrees.

Studies such as those reported by Bucknavage and Worrell (2005) indicate that more students participate in athletics when compared with other extracurricular activities because there are more positions open on sports teams such as varsity, junior varsity, girls' and boys' teams than in other clubs. School-sponsored sports activities are argued to have a major influence on students' academic performance. Lipscomb's (2007) study indicated that students' participation in school-based athletics had a larger effect on test scores when compared with their involvement in other school-related clubs.

Relationship between Requirements for Participation in School Sports and Student Achievement

Typically there are requirements students must meet to participate in school sports. For example, to participate in school-sponsored sports in Anne Arundel County, Maryland Public Schools (AACPS), students must obtain and pass a doctor's physical assessment, must have a minimum of a 2.0 grade point average, and must adhere to school system rules regarding attendance and sportsmanship (Anne Arundel County Public Schools, 2015). Many other school districts across the state and nation follow similar guidelines. These requirements establish a

standard for each student who tries out for and participates on a sports team, which differs from other school-related clubs that may not have such strict guidelines.

Because school sports teams require much time on the part of the student athlete for practices, games, fundraising events, and pre-season training, it could be argued that students might not have time to maintain high grades if they are enrolled in rigorous courses. However, Denault et al. (2009) conducted a five-year longitudinal study with students from grades seven to 11 and found through use of questionnaires, phone interviews, and review of school records and found that student athletes actually had received increased opportunities to strengthen their academic skills and knowledge, as well as to enhance their interpersonal relationships. Additionally, Fredericks' (2012) conducted a study focused on 10th graders' participation in school-based activities over two years in which surveys and transcripts indicated that the amount of time spent in activities was positively related to academic achievement. Similarly, Jonker et al. (2009) studied 400 athletes between the ages of 14 and 16 enrolled either in pre-vocational or pre-university schools, and found a positive correlation between academic achievement in reading and school-sports participation for athletes in the pre-university schools with higher levels of competition. Therefore, findings from these studies suggest that the amount of time a student spends on a sport may not affect their academic achievement in a negative manner.

Relationship between Physical Activity and Student Achievement

The physical nature of sports requires students to be active after a long day of sitting in a classroom. Fox et al. (2010) found that there was a positive correlation between engaging in moderate to vigorous activity after school and an athlete's grade point average. Kim's 2014 study found that as students competed at more difficult levels of sports (such as those at a varsity level), they spent more time training for the sport, but their academic achievement did not suffer.

Based on surveys of 15,362 male students in 10th and 12th grade, participation on a high school sports' team was found to be a predictor of a male student athlete's college bound academic behavior (O'Bryan, Braddock II, & Dawkins, 2008).

Relationship Between Sports Participation and Self-Concept

Self-concept refers to “the whole set of attitudes, opinions, and cognitions that a person has of himself” (Collins English Dictionary, 2012). Aspects of school sports can aid a student in developing a more positive self-concept (Barnett, 2007). One study found that students who were placed on sports teams after a tryout session experienced “an immediate increase in how good the applicants felt about themselves” (Barnett, p. 339). Compared to other students, Bradley et al. (2013) found that student athletes have more traits that lead to motivation and self-efficacy, such as reliability, self-discipline, and self-preservation. Each of these studies suggests that aspects of joining and playing school sports affect students' self-concepts.

The self-concept developed on a sports team affects a student's achievement in the classroom. The sense of belonging achieved on the team helps to promote academic achievement (Knifsend & Graham, 2012). Sports teach traits that are not factors of extrinsic motivation such as working hard, sacrificing, working as a team, accepting humility, and being a leader (Kronholz, 2012). These factors each play a role on the playing field, but also in the classroom. Pearson et al. (2009) conducted a survey of 5,447 students and obtained results suggesting that athletes have higher levels of self-perceived intelligence when they compared themselves with their peers.

Relationship Between Sports Participation and Social Development

Students' self-concepts can be directly related to their peer interactions. Activities such as participation on a sports team provide students with an opportunity to develop and maintain

friendships with other youth who have similar interests and characteristics (Simpkins et al., 2008). Students who participate in sports not only are viewed as more popular among their peers, they also have a higher social status which contributes to their selection as school leaders and their influence on the direction of the school's social norms (Barnett, 2007). In a study reported by Bradley et al. (2013), interviews administered to 402 student athletes over four years yielded results indicating that athletes reflected more highly developed traits of extraversion and conscientiousness than non-athletes due to the positive emotions felt while being a part of a sports team.

Coaches and other adult volunteers serve as additional role models to student athletes. These adults often fill roles for athletes that a teacher or a parent cannot. This additional support may be a factor in studies that have found a decrease in depressive symptoms in student athletes (Denault et al., 2009).

Relationship Between Sports Participation and Connectedness to School

Along with self-concept, sports involvement can help students feel more connected to their school in terms of belonging and feeling a sense of pride. Barnett (2007) found that because student athletes had a higher self-concept, they expressed more positive attitudes toward peers, teachers, and enjoyed school. Results from Barnett's study also indicated that girls who were accepted on the cheerleading or dance team after tryouts reported that they wanted to go to school more often than not, and those who were unsuccessful had negative feelings that directly affected their academic performance in terms of attendance, grades, and attentiveness. Pearson and his associates (2009) suggest that athletes appear to be more integrated and involved in their school than students who participate in other clubs. Similarly, a sense of belonging and grade point average are highest for adolescents involved in two activities, rather than three or four

(Knifsend & Graham, 2012). Students involved in sports appear to enjoy coming to school more often than those who are not involved because they find a social circle through their team, and are more involved in their schools (Kronholz, 2012).

Impact of Participation in Sports on Academic Achievement

Numerous studies have yielded results that suggest there is a positive correlation between academic achievement and involvement in school-sponsored sports. The world of sports values academic success, perhaps due to eligibility requirements or in support of student athletes' future endeavors in post-secondary education, which could partly explain why there is such a high correlation between participation and academic achievement (Denault et al., 2009). Similarly, Bucknavage and Worrell (2005) and Fox et al. (2010) found correlations between participation in activities and grades. Athletes were found to outperform the general population in academic achievement (Georgakis, Evans, & Warwick, 2015). Two-thirds of students in the highest quarter of test takers participated in sports, as opposed to less than half in the lowest quarter (Kronholz, 2012). In one study, the odds of attending college were 97% higher for students who were engaged in such activities than for students who did not join at all (Kronholz, 2012). Lipscomb (2007) found that participation in sports was associated with higher test scores and how likely athletes perceived their chances of receiving a Bachelor's degree to be. Even the perception of attaining higher education rises with sports involvement. Rees and Sabia (2010) also discovered that in a survey of 20,746 middle and high school students, results indicated that those who were involved in sports not only had more years of education attained, but also had higher self-expectations to attend college.

Other studies have suggested that participating in activities may have a positive influence on engagement with schoolwork, but not on actual academic performance (Knifsend & Graham,

2012). Pearson et al. (2009) found that student athletes are more likely to take advanced courses in science and foreign language and female athletes are 71% more apt to take Physics and 61% more apt to take an advanced foreign language course compared to their non-athletic counterparts. Male athletes are 53% more likely to take Physics and 72% more likely to take an advanced foreign language than those who did not participate in sports (Pearson et al.). These studies indicate that participation in sports may play a role in student athletes' enrollment in upper level high school courses, although it does not indicate their actual performance in the class.

Factors Influencing Participation in Extracurricular Activities

Among the factors that influence student participation in extracurricular activities are parent involvement and school budgets and resources. Both active parent involvement and provision of adequate resources can support student athletes in achieving academic success.

Parent Involvement

Parent involvement plays a large part in a student's life, and often, in determining their educational success. School sports offer many opportunities for parent involvement: parents come to games, help fundraise, and support their children's participation in sports camps and clubs to better their athletic abilities (O'Bryan et al., 2008). Parents were reported to be more involved in their male students' high school career as a result of their athletic involvement (O'Bryan et al.). Parents who are concerned with their child's ability to participate in sports may promote achievement in the classroom to ensure their eligibility.

School Budget and Resources

Schools continue to experience budget cuts that directly affect students. Studies must continue to reflect upon the positive effect of extracurricular activities on students so that schools

and those that make decisions regarding school budgets will continue to support clubs and sports teams that are associated with positive educational outcomes. Many studies indicate that sports and extracurricular activities may help narrow the achievement gaps between high and low achievers from diverse backgrounds with diverse needs (Fredericks, 2012). Yet, some schools are turning over their sports teams to community programs due to budgeting issues within the school system. This, in turn, often causes schools and coaches associations to have difficulties finding sponsors for the activities (Kronholz, 2012).

Summary

Involvement in school-sponsored sports affects many aspects of students' lives including academic performance. While there are similarities between sports and extracurricular activities such as academic and performing arts clubs, participation on sports teams offers some unique influences on students' personal development and their academic achievement. Research such as that included in this literature review suggests that there is a positive relationship between students' participation in sports and their academic achievement and that further study regarding that connection is warranted.

CHAPTER III

METHODS

The purpose of this research was to determine whether participation in school-sponsored sports was related to academic achievement or students' perceptions related to their courses, work habits, or achievement.

Design

This study used a causal-comparative design to compare achievement and perceptions of coursework or classroom work habits of two pre-existing groups of students, one of which participated on an athletic team during the winter season and one of which did not.

Participants

Three homerooms were randomly selected from grades nine through twelve at the researcher's school and each student in those homerooms was asked to complete a survey and participate in this study. The researcher utilized a non-probability convenience method because it included students who were readily accessible to her at her place of employment. One hundred and sixty-two males and 198 females were chosen to participate in the study, constituting a total of 360 students. However, only 126 or 35% of these students, 53 males and 73 females, actually returned their surveys.

Instruments

The researcher was granted access to participants' second marking period grades by the school principal to conduct this action research. Grades and surveys were kept confidential. The grades were recorded as grade point averages.

A survey, developed by the investigator, was distributed to the students in a total of 12 randomly selected homerooms, three of which three were from each grade level (see Appendix

A). The survey asked the students to describe their participation in sports, including listing the winter sport in which they participated, if they tried out for a winter sport, if they previously played a winter sport, the main reason that they decided to play or not play a winter sport, if they were a team leader, their rating of their skill level, and an indication of how many years they were previously on a winter sports team. Student athletes were asked to rate and describe how they felt their winter sports participation affected their academic achievement. All students also were asked to list and describe their enrollment choices and to rate their school work habits and the difficulty of their second marking period courses, which coincided with the winter sports season.

Procedures

Prior to conducting any steps of this study, the researcher was granted her principal's permission to complete this study. Procedures followed in the study are described below.

After randomly selecting 12 homeroom sections, the researcher contacted the homeroom teachers to inform them of the purpose and process of the study and obtained permission to administer the survey to their students. Once permission was secured, each homeroom teacher received a student roster with numbers designated for each student and envelopes containing surveys which were numbered to correspond with the students to maintain participant anonymity. Prior to distributing the surveys, teachers read the purpose of the survey to the students from a description located at the top of the survey.

Students who were willing to participate in the study then completed the survey anonymously during their homeroom session and gave the completed survey to their homeroom teacher, keeping all information within their designated envelopes. Teachers then returned the surveys and rosters to the researcher. The researcher gathered grade point averages from the

second marking period for each student participant. The researcher then compiled the achievement and survey data into an Excel spreadsheet for analysis.

CHAPTER IV

RESULTS

The purpose of this research was to determine whether participation in school-sponsored sports was related to academic achievement and students' perceptions related to their work habits. In this study, the independent variable was whether or not students participated on a sports team in the winter season. The dependent variables were students' grade point averages and their perceptions of their work habits and performance in classes during the second marking period, which closely coincided with the winter sports season.

Sample/Respondents and Sports

Of the 126 participants, 53 were males and 73 were females. Respondents were each enrolled in one of 11 homerooms in which they completed a survey developed by the researcher. Thirty-five respondents were in 9th grade, 37 were in 10th, 22 were in 11th and 32 were in 12th grade.

Among the 126 students who completed their surveys, 73 reported that they had played or tried out for a sport in the current or past year. One of those was cut and nine reported that they played last year but not this year, so in all, 63 respondents indicated they were student athletes during the current (2015/2016) winter season, and 63 indicated they were not. Sports and the number who reported playing them follow in Table 1 (63 players).

Table 1

Winter Sports Played by Athlete Participants

Sport	Number who played
Basketball	16
Bowling	4

Cheerleading	4
Dance	8
Swimming	8
Track	19
Wrestling	4
Total	63

Students were also asked to state why they played or did not play the winter sports now or in the past. Their responses are summarized in Table 2.

Table 2

Reasons for Playing or Not Playing Sports in the Winter

	Frequency reason given by Athletes	Frequency reason given by Non-Athletes
Reasons for Playing		
PLAYED SPORT FOR LONG TIME	5	
LIKE THE SPORT	20	
FUN/SOCIAL	11	
CONDITIONING	16	
GOOD AT SPORT	1	
Reasons for not Playing		
BUSY SCHEDULE	1	7
PARENTS	1	
DIDN'T GET ALONG WITH COACH		2
DIDN'T GET ALONG WITH SOME TEAMMATES		1
DID NOT ENJOY IT	1	
BORING		1
GOT CUT		1

Sports and Grades

In order to test the initial null hypothesis, which stated that mean the grades for students playing a winter sport would not differ significantly from those of students not participating in a winter sport, a t-test for independent samples was conducted to compare the two groups' mean 2nd marking period grades (GPAs). The results follow in Tables 3 and 4 indicated that the athletes' mean GPA of 3.716 was statistically significantly higher than the non-athletes' mean GPA of 3.364 (T=2.206, p < .029). Therefore, the null hypothesis that the means would be the same was rejected.

Table 3

Descriptive Statistics of GPA for Athletes and Non-Athletes

Status	N	Mean	Standard Deviation	Standard Error of Mean
Athletes	63	3.716	.667	.084
Non-athletes	63	3.364	1.075	.135

Table 4

Results of t-Test for Independent Samples Comparing Athletes' and Non-Athletes'

Second Marking Period GPAs

t	df	sig	Mean difference	Standard Error of Difference	95% confidence interval of the difference
2.206	124	.029	.352	.159	.036-.667

Athlete respondents were asked on item 2A of the survey to rate how they felt their participation in sports affected their academic achievement during the second marking period using the following scale below which ranged from 1 (no impact see below) to 7 (extreme positive impact). Their ratings are summarized in Table 5.

Table 5

Impact of Sports on Athletes' Marking Period 2 GPA

- 1 = no impact
- 2 = extreme negative impact
- 3 = some negative impact
- 4 = little negative impact
- 5 = little positive impact
- 6 = some positive impact
- 7 = extreme positive impact

Rating	Frequency of Rating
No response	2
1 = no impact	16
2 = extreme negative impact	0
3 = some negative impact	7
4 = little negative impact	16
5 = little positive impact	8
6 = some positive impact	11
7 = extreme positive impact	3

Perceptions of Work Habits

Null hypothesis two was that the mean perceptions of classroom work habits for students playing a winter sport would not differ significantly from those of students not participating in a winter sport. This hypothesis was tested by comparing mean ratings assigned to items 3a-3m on the survey by student athletes and non-athletes using t-tests for independent samples. The responses to each item ranged from 1 (*never*) to 5 (*almost always*) for each item. The key is below and descriptive statistics and results of the t-tests follow in Table 6.

Key:

- 1 = never
- 2 = seldom
- 3 = sometimes
- 4 = usually
- 5 = almost always

Table 6

Descriptive Statistics and t-Test Results Comparing Athletes' and Non-Athletes'

Perceptions of Their Work Habits and School

Descriptive Statistics					t-Test Results					
Item	N	Mean	sd	SEM	t	df	sig	Mean Difference	Std. Error of Difference	95% Confidence Interval
a. I complete my assignments and work on time.										
Athletes	63	4.381	.750	.094	1.66	116	.100	.217	.131	-.042-.477
Non-athletes	55	4.164	.660	.089						
b. I work independently on assignments, ask for help only when needed.										
Athletes	63	4.302	.754	.095	.753	116	.453	.102	.135	-.166-.369
Non-athletes	55	4.200	.704	.095						
c. I remain attentive in class.										
Athletes	63	4.191	.692	.087	.523	116	.602	.063	.121	-.176-.303
Non-athletes	55	4.127	.610	.082						
d. I maintain organization of course materials.										
Athletes	62	4.161	.961	.122	1.218	115	.226	.216	.177	-.135-.567
Non-athletes	55	3.946	.951	.128						
e. I am on task and uses time productively.										
Athletes	62	4.048	.777	.099	1.175	115	.243	.176	.150	-.121-.472
Non-athletes	55	3.813	.840	.113						
f. I participate in class activities and discussions.										
Athletes	63	4.016	.852	.107	2.037	116	.044	.325	.160	.009-.641
Non-athletes	55	3.691	.880	.119						
g. I give the best effort on assignments, projects, and assessments.										
Athletes	63	4.651	.600	.076	2.283	116	.024	.269	.118	.036-.502

Non-athletes	55	4.382	.680	.092						
h. I think school is important for my future.										
Athletes	63	4.746	.538	.068	1.528	116	.129	.164	.107	-.486-.377
Non-athletes	55	4.582	.629	.085						
i. I study hard because my grades are important to me.										
Athletes	63	4.079	.921	.116	.661	116	.510	.116	.175	-.231-.463
Non-athletes	55	3.964	.981	.132						
j. I choose challenging courses.										
Athletes	63	4.143	.998	.125	1.484	116	.140	.288	.194	-.096-.673
Non-athletes	55	3.855	1.113	.150						
k. I think working hard is important.										
Athletes	63	4.730	.515	.065	2.539	116	.012	.330	.130	.073-.588
Non-athletes	55	4.400	.873	.118						
l. I do not think grades matter.										
Athletes	62	1.338	.829	.105	-2.328	115	.022	-.407	.175	-.753-.061
Non-athletes	55	1.746	1.058	.143						
m. I think participation in sports is as important as grades for my future.										
Athletes	63	3.524	1.330	.168	4.560	116	0	1.124	.246	.636-1.612
Non-athletes	55	2.400	1.341	.181						

Equal variances assumed for all t tests

The results in Table 6 indicate that the athlete and non-athlete respondents' ratings differed significantly on items 3f, g, k, l and m. Their response patterns suggested that athletes rated themselves as participating more in class, demonstrating more effort on work, valuing effort and grades and valuing sports relative to grades for their futures than did non-athletes. The mean responses on all of the other items did not differ significantly between the two groups. As some did differ, however, null hypothesis two was also rejected.

Rigor

Finally, to compare the rigor with which the non-athletes and athletes selected their courses, students were asked to designate which of their courses were AP, honors or college

level courses on their surveys. Table 7 presents the frequency with which each type of course was reportedly taken on average by the 63 athletes and 63 non-athletes.

Table 7

Levels of Classes

	Honors	AP	College level	Total advanced level courses
Non-Athletes (63)	109	75	35	219
Athletes (63)	147	69	30	246

Table 8 lists the number of all classes described by athletes and non-athletes. Difficulty ratings ranged from 1 (extremely easy) to 5 (extremely difficult) for both groups for a variety of courses. (Note that the totals do not add up to the total classes reported as all students did not rate the difficulty of all their classes.)

Table 8

Summary of Class Difficulty Ratings by Athletes and Non-Athletes

	Athletes	Non-athletes
Total classes reported	459	435
Difficulty ratings	Frequency of Rating	Frequency of Rating
1	71	70
2	56	89
3	115	98
4	97	72
5	19	21

The courses then were broken down to compare athletes' and non-athletes' perceptions of the difficulties of the advanced courses they reported taking. Descriptive statistics and results of a t-test for independent samples comparing the two groups' mean difficulty ratings follow in

Tables 9 and 10. No significant difference was found in the mean ratings for the two groups ($T = -1.762$; $p < .079$). (Note that the total number of advanced courses per group in Table 9 does not equal those reported in Table 7 as not all of the advanced level courses were rated for difficulty by respondents in either group.)

Table 9

Descriptive Statistics of Ratings of Difficulty of Advanced Courses for Athletes and Non-Athletes

	N	Mean	Standard Deviation	Standard Error of Mean
Non-Athletes	99	3.172	1.011	.102
Athletes	127	3.406	.973	.086

Table 10

Results of t-Test for Independent Samples Comparing Athletes' and Non-Athletes' Second Marking Period GPAs

t	df	sig	Mean difference	Standard Error of Difference	95% confidence interval of the difference
-1.762	224	.079	-.2338	.1327	-.495-.028

CHAPTER V

DISCUSSION

The study was conducted to determine whether participation in school-sponsored sports was related to academic achievement or students' perceptions related to their courses, work habits, or achievement. In this study the independent variable was whether or not students participated on a sports team in the winter season. The dependent variables were students' grade point averages and their perceptions of their work habits and performance in classes during the second marking period, which closely coincided with the winter sports season.

The initial null hypothesis that mean grades for students who play a winter sport would be equivalent to the mean grades for students not participating in a winter sport was rejected. The null hypothesis that mean perceptions of classroom work habits for students playing a winter sport would be equivalent to the mean perceptions of classroom work habits for students not participating in a winter sport also was rejected.

Table 1 presents data indicating that there was a fairly wide range of winter sports played by athlete respondents. However, it is important to note that, the majority of student athlete responses participated in track (30.16% of student athletes surveyed) and basketball (25.4% of student athletes surveyed). These teams have players who represent all high school grade levels and both genders.

Table 2 summarizes the reasons students decided to play or not to play school sports during the 2015-2016 winter sports season. The majority of winter sports student athletes chose to play were selected because of their enjoyment and appreciation of the sport (35.7% of the total responses for student athletes) and their desire for conditioning and staying in shape (28.57% of the total responses for student athletes). The majority of students who decided not to play

reported that their decision was due to a busy schedule (58.3% of total responses for student athletes who decided not to play this season).

Tables 3 and 4 present data which indicate that the first null hypothesis was rejected as the student athletes' mean grade point average (3.716) was statistically significantly higher than the non-athletes' grade point average (3.364).

A summary of ratings reflecting student athletes' perceptions of how sports affected their grade point averages during the second marking period is found in Table 5. Sixty-one out of 63 athletes responded to this item and two did not. Interestingly, the perceived impact ranged widely from somewhat negative to extremely positive. Sixteen or 25.4% of the respondents indicated that they perceived no impact on their grades from winter sports participation whatsoever. Twenty-three or 36.5% of the total responses indicated that they perceived sports had either little or some negative impact on their second marking period grades and 22 or 34.9% indicated they felt participating in sports had between little to an extreme positive effect on their grades.

Table 6 presents descriptive statistics and comparisons between athletes' and non-athletes' ratings of their work-related habits and views of school and learning in relation to sports. Five of these 14 items yielded mean differences in responses that were statistically significant between athletes and non-athletes. These items were 3f, g, k, l and m and on each of these items, student athletes rated themselves higher than their counterparts. Because there were differences between some items, the second null hypothesis, that perceptions of work habits would be the same across athletes and non-athletes, also was rejected.

The data in Table 7 indicates that athletes and non-athletes were enrolled in relatively comparable numbers of advanced courses (honors, advanced placement, or college level). Table

8 presents the ratings of difficulty for athletes' and non-athletes's classes, for which the range was the same (1-5) and the distribution of ratings was fairly similar.

Tables 9 and 10 present descriptive statistics and a comparison, via a t-test for independent samples which compared the difficulty ratings the two groups assigned to only their advanced classes. No statistically significant difference was found in the mean ratings of the two groups ($T=-1.762$, $p < .079$). Athletes who rated their advanced classes tended to describe the workload in them as rigorous and indicated they required a lot of high level thinking. Non-athletes who rated their advanced classes similarly noted that there was a dense workload.

Overall, the findings appear to suggest that participation in school-sponsored sports may have little impact on how students perceive their advanced courses. However, the findings suggest that such participation may have an impact on students' grade point averages.

Implications of Results/Theoretical Consequences

Since both null hypotheses were rejected, it appears that student participation in school-sponsored sports may prove beneficial in terms of students' academic achievement. Whether or not sports participation improves students' grade point averages, the increased focus on their work habits and the value that these student athletes hold for education might have proven beneficial to their overall school environment and their school's mission of providing educational excellence.

This research also raises questions about how school systems might provide equally beneficial environments for non-athletes or how they might allow more opportunities for all students' involvement in activities which support achievement. For example, schools could see which extracurricular areas their building does not address or survey their students to find out what kinds of clubs they wish that their school had.

Connections to Previous Studies

Compared to results from prior research examined for this study, the results of this study may indicate that there are correlations between participation in sports and academic achievement (Fox et al., 2010; Fredericks, 2012; Jonker et al., 2009; Kim, 2014; Lipscomb, 2007). The athletes' mean grade point average was higher than that of the non-athletes', which corresponds with the study conducted by Georgakis et al. (2015) which found that athletes outperformed the general population in academic achievement. In Knifsend & Graham's study (2012), engagement in school-sponsored sports had a positive influence on engagement with schoolwork, which corresponds with data offered in this study where athletes rated themselves higher in terms of their participation in class, demonstrating more effort on their work, and valuing effort and grades as compared to non-athletes. Results of this action research study may support the data reported in prior studies that student athletes have a higher self-concept than non-athletes, as supported by some of the literature (Barnett, 2007; Bradley et al., 2013; Pearson et al., 2009).

Threats to Validity

Several factors posed threats to the validity of this study. While results from this study found differences in student athletes' and non-athletes' mean grade point averages and ratings of perceptions of some of their work habits, outside influences may have existed which the survey data could not reflect or take into account. Many factors likely play into a student's grade point average. The factors include, but are not limited to, attendance, family structure, socioeconomic status and overall motivation. The survey data did not account for these factors in any detail although they may have impacted the study's results.

Additionally, the sample composition and size used in this research may not reflect other or all students. Because the researcher only could access participants in one school, only could focus on one sports season and one marking period, the findings may not be an accurate, nationwide portrayal of the academic performance and perceptions of student athletes across sports teams, seasons or regions.

Another threat to the validity of these findings is the amount of time that passed between the end of the second marking period and the completion of the survey. The second marking period ended on January 22, 2016 and the survey was given to students almost a month later on February 23, 2016. Students' perceptions of their classroom work habits during second marking period may have been altered as nearly a month had passed since the season and second marking period ended.

Finally, how seriously the students took the survey could help or pose a threat to the findings' validity. Although the homeroom teachers were instructed on how to direct students to fill out the survey, many students did not participate or fully complete the survey in the time allotted. Because this was a self-report, and as noted, retrospectively, students' opinions of their classroom behaviors in the second marking period may not accurately reflect their actual performance in class. It would have been useful to have teachers provide reports in conjunction with each student's activities and progress. However, given the number of respondents, such an additional requirement would not have been an appropriate request.

Implications for Future Research

For future research related to school-sponsored athletics and academic achievement, a larger sample might provide a more generalizable comparison of the criterion variables for student athletes and non-athletes. Researchers also might investigate whether or not other school-

sponsored activities provide the same opportunities and motivation as sports appeared to do for these athletes. Additionally, examining more closely the characteristics of particular activities and the students who participate in them, the activity leaders, and curricular content and delivery may help clarify relationships regarding which aspects of each of these factors relate to achievement and how. It also would be helpful to determine the relationship between grade point averages and sports for student athletes who play a sport during one or more seasons per year, as opposed to just the winter sports season.

Conclusions/Summary

Research is needed regarding the relationships between and among participation in school-sponsored sports, academic achievement, and student self-concept. Results of this study indicated that athletes' mean grade point averages were higher than those of non-athletes'. Results also revealed that athletes rated themselves higher than non-athletes concerning self-concept and schoolwork. Educators and school systems would benefit from more research to clarify what environments within and outside of sports teams enhance achievement and effort.

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APPENDIX A

Survey of Perceptions of Classroom Work Habits

ID #: _____ Homeroom Teacher: _____
 Gender (circle one): M F
 Grade Level (circle one): 9 10 11 12

I am conducting an action research project for my graduate class at Goucher College to investigate how students' participation in school-sponsored sports might relate to their choices, behaviors, and perceptions of your academic achievement. By completing this survey, you will be helping me complete this study as an anonymous participant. Please be assured that none of your individual responses or personally identifying information will be shared in any identifiable way.
 Thank you for helping me to complete this research. Your input is incredibly valued. – Lauren Straub, English 10

Directions: Please respond to each item of this survey as accurately as possible by considering the WINTER SPORTS season.

1. Check or respond to all that apply:

Sport (Please fill in any for which you tried out or which you played)	Tried out for and made the team?	Tried out for and was cut?	Played last year, but not this year?	Main reason played OR decided not to play? (3-5 words)	Are you a team leader? If so, write in your leadership role.	Rate your skill level (1=beginne r, 2=below average, 3=intermed iate, 4=above average, 5=expert).	How many years have you been on the team or played this sport?
Winter Sports							

JV or V?							

JV or V?							

JV or V?							

If you played a school sport during the winter season this year, please answer the following questions to the best of your ability.

2a. Rate how your participation in sports affected your academic achievement during the second marking period using the following scale from 1 to 7.

- 1 = no impact
- 2 = extreme negative impact
- 3 = some negative impact
- 4 = little negative impact
- 5 = little positive impact
- 6 = some positive impact
- 7 = extreme positive impact

1 2 3 4 5 6 7

2b. Explain why you answered Question #2a as you did.

3. Rate your overall classroom work habits on a scale of 1-5.

- 1 = never
- 2 = seldom
- 3 = sometimes
- 4 = usually
- 5 = almost always

a. I complete my assignments and work on time.

1 2 3 4 5

b. I work independently on assignments, asks for help only when needed.

1 2 3 4 5

c. I remain attentive in class.

1 2 3 4 5

d. I maintain organization of course materials.

1 2 3 4 5

e. I am on task and uses time productively.

1 2 3 4 5

f. I participate in class activities and discussions.

1 2 3 4 5

g. I give the best effort on assignments, projects, and assessments.

1 2 3 4 5

h. I think school is important for my future.

- 1 2 3 4 5
i. I study hard because my grades are important to me.
1 2 3 4 5
j. I choose challenging courses.
1 2 3 4 5
k. I think working hard is important.
1 2 3 4 5
l. I do not think grades matter.
1 2 3 4 5
m. I think participation in sports is as important as grades for my future.
1 2 3 4 5

4. List the classes that you were enrolled in during **second** marking period. Be sure to place a checkmark in the appropriate column to indicate if your courses were honors, AP, or college level.

Course Name	Honors?	AP?	College-Level?	Why did you decide to take this course? (Please give a 2-4 word response)	Do you like this course? (Yes or No and a 2-4 word reason why)	On a scale of 1-5 rate the course's difficulty level. 1=extremely easy 2=fairly easy 3=neither easy nor difficult 4=fairly difficult 5=extremely difficult (Please add a 2-4 word comment about why)
