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# Sport Participation and Academic Achievement in High School Athletes

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Sport Participation and Academic Achievement in High School Athletes

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A Synthesis Project

Presented to the

Department of Kinesiology, Sport Studies, and Physical Education

The College at Brockport

State University of New York

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science of Education

(Athletic Administration)

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By

Meg A. Stucko

Fall 2018

THE COLLEGE AT BROCKPORT

THE COLLEGE AT BROCKPORT  
STATE UNIVERSITY OF NEW YORK  
BROCKPORT, NEW YORK

Department of Kinesiology, Sport Studies, and Physical Education

Title of Synthesis Project: Sport Participation and Academic Achievement in High School

Athletes

*Cathy Houston-Wilson*

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Instructor Approval

Date

Accepted by the Department of Kinesiology, Sport Studies, and Physical Education, The College at Brockport, State University of New York, in partial fulfillment of the requirements for the degree Master of Science in Education (Physical Education).

*Cathy Houston-Wilson*

12/12/18

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Chairperson Approval

Date

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### **Abstract**

The purpose of this synthesis was to identify sport participation as a motivational influence and driving factor behind the increased academic success in high school student-athletes. An extensive examination of literature was conducted in order to review and research the effects on academic achievement in high school students, in relation to their participation status on a school-organized sports team. Higher grade point averages (GPA), graduation rates, ACT scores, along with lower dropout rates are all prominent among student-athletes as well (Lumpkin & Favor, 2012). There are many positive benefits that come along with sport participation, yet some feel it has the potential of creating strain on the relationship with the school by diverting the student-athlete's attention and efforts away from their academics. This synthesis will review the literature on participation in interscholastic athletics at the high school level and examine the effects participation has on academic performance.

Keywords: Academic performance, educational attainment, athlete, graduation rates, interscholastic athletics

## **Chapter 1:** ***Introduction***

The number of high school students participating in interscholastic athletics annually has grown to over 7.6 million (Lumpkin & Favor, 2012). These 7.6 million students who participated on a sport team make up over 55% of all high school students, meaning there has been over 22 consecutive years of increase in sport participation (Hwang et. Al, 2013). Participation in organized sports has historically been viewed as a means of integrating students into both the school as an organization, and into society as a whole. A popular topic that has been debated is whether or not participation in competitive sports programs at the high school level has the potential to develop the participants' behavior, achievements, and character in other areas of their lives beyond just their field of play (Ryska, 2003). It can be reasoned that through interscholastic participation in athletics, positive outcomes can be seen in student-athletes' educational aspirations, academic achievement, and character building. High schools must stress that active involvement in an extracurricular activity is an honor and opportunity that is granted only to students who first fulfill their academic obligations, and meet eligibility standards (Lumpkin & Favor, 2012).

There have been many studies on this topic of high school athletic participation that have provided valuable information on the academic effects it has on its participants. The various effects that participation has on athletes can be both negative and positive. The literature review in this synthesis will aim to produce additional information that will be valuable to future athletes in terms of positive development. Higher grade point averages (GPA), graduation rates, ACT scores, along with lower dropout rates are all potential outcomes hoped to be achieved among student-athletes (Lumpkin & Favor, 2012). Beyond academics, students who participate

on a sports team often reap other benefits such as identity development and growth in character and leadership (Hwang et. al, 2013).

High school sport involvement has the potential to enrich every individual participant's overall educational experience, while ensuring that his or her academic success is always viewed as the highest priority (Lumpkin & Favor, 2012). Organized sport participation and physical activity have been positively related to academic achievement and improved school performance (Dyer at al., 2017). Sport participation and time spent practicing and competing has the capability of serving as an additional channel of learning (Schultz, 2015). However, many students make the decision to participate on a team without knowing the various effects it can have on their academic performance. Athletes, parents, and coaches need to be educated on the varying effects sport participation can have on themselves, their children, and their players. While some effects can be clearly beneficial, others are negative. Being able to evaluate the many effects and make an informed decision is something that every student and parent should be able to do.

### **Purpose of the Synthesis:**

The purpose of this synthesis project is to review the literature on the effects of sport participation of high school student-athletes on academic achievement.

### **Research Question:**

1. Does participation in interscholastic athletics serve as a contributing factor to academic success, or interference to the educational mission of the institution?

### **Delimitations:**

1. All articles focused on high school aged student-athletes as it relates to sport participation as a motivational influence behind increased academic success.

2. All articles examined the outcomes created by active participation in a school organized sport.
3. All articles used came from the years 2000 to 2018.
4. All articles were peer reviewed.

### **Operational Definitions**

1. **Academic Performance or Educational Attainment:** The method in which each institution tracks the learning and progress of each student (Schultz, 2015).
2. **Athlete:** A person who is trained or skilled in a sport and regular competes with other in organized events (Schultz, 2015).
3. **Graduation Rates:** The number of students who complete their high school education and graduate, broken down into a percentage (Lumpkin & Favor, 2012).
4. **Interscholastic Athletics:** Sport competition carried out between two or more schools (Lumpkin & Favor, 2012).



## **Chapter 2:** *Methods*

The purpose of this chapter is to review the methods used to find literature on sport participation. More specifically, sport participation as a motivational influence and driving factor behind the increased academic success in high school student-athletes. The objective of this chapter was to define and describe the processes, procedures, and methods that were followed in order to find the desired and needed collection of literature for this synthesis.

The studies that were collected for this synthesis were found through the use of the EBSCO database from The College at Brockport's Drake Library. From within the EBSCO database the following databases were searched: SPORTDiscus and Academic Search Complete. Within these databases there were a total number of 11 articles and sources that met the conditions for inclusion as part of the critical mass within this literature review. In order for a source to meet the criteria to be included in the selection in this synthesis it must have been published between: 2000 – 2018. This allows for the synthesis to include only the most updated and modern information and supporting sources. Additional criteria for selection was including only scholarly and peer reviewed articles that were full text. The use of only scholarly and peer reviewed articles delivered increased strength and validity within the sourced articles and an overall improved quality of literature. Other sources and articles that were chosen as to be included in this literature review provided additional information, circumstantial knowledge, and added context about the topic. The reference section of this paper properly cites each article and source.

In order to collect appropriate and applicable articles for this synthesis, specific keywords and phrases were used while searching the database. Each keyword and phrased used in the

search were significant to the topic and provided relevant sources. Within the EBSCO database, the first search was “high school +sport participation” which generated 3,704 results on the database. This was the first necessary topic searched because it held the most relevance to the purpose of this synthesis, which was to review the literature on high school sport participation: more specifically, the nature of the relationship with academic achievement. No articles from the first search were selected. The second search “high school + sport participation or sport involvement + academic achievement or academic performance” resulted in 217 results. Limiting this search down to only full-text articles narrowed down the results to only 83 articles. From those 83 articles, 7 were selected for the literature review. A second search was conducted using “high school + athletic participation + educational attainment” yielding 10 results. Of these 10 results, only 2 articles were used in the literature review. Lastly, “high school sport participation + academic success” was searched producing a total of 88 full text articles, 2 of which were selected for use in this literature review.

All articles that were selected for inclusion in this synthesis were scholarly and peer reviewed articles that were full-text. When selecting articles to include in this synthesis it was critical that each individual article held relevant information on the effect sport participation at the high school level had on academic outcomes. Participants were both male and female at the high school level.

For this synthesis a total number of eleven articles were used to compile data on the topic of sport participation and the effect on academic success in high school student-athletes. There was one journal that provided two articles for use in the literature review. The remaining nine articles came from different journals that were all relevant in some way to the topic of sport participation and the effect on academic success in high school student-athletes. The Journal of

Youth & Adolescence provided two articles that were utilized in the literature review. The remaining nine articles that were used included: Sociology of Sport Journal, Journal of Sports Economics, International Sports Journal, Journal of Sport Administration & Supervision, Youth & Society, American Journal of Health Behavior, Kentucky Newsletter for Health, Physical Education, Recreation & Dance, International Journal of Behavioral Nutrition & Physical Activity, and the British Educational Research Journal. Many of the articles analyzed the data using similar methods. One article used survey questionnaires to collect the data from participating high schools. All analyses were then done using the SPSS 23.0 software, along with the use of Analysis of Covariance (ANCOVA) models to make predictions and control variables. One of the articles information was attained from the Educational Longitudinal Study of 2002, a study done in a series of school-based longitudinal studies conducted by the National Center for Educational Statistics. Questionnaires were provided to collect data, and analyses were then conducted Mplus 6.1. The articles used that were literature reviews compared the results and findings from other sources to draw up conclusions on the topic of high school sport participation and the effects and academic performance.

Many of the participants were of high school age and actively participated on at least one sports team through the school. In some instances, participants who did not participate on a sports team were included to allow making comparisons of athlete versus non-athlete possible. The ages of the participants ranged from 14 years old up to 26 years old. This was due to one article following up with participants up to 8 years post high school graduation. The majority of the articles in this study focus on high school aged individuals. The critical mass for this research included a total of 170,057 participants. Several articles provided an analysis of both male to female ratios and breakdowns based on ethnicity, while others did not.

### **Chapter 3: *Literature Review***

The purpose of this chapter is to present a review of literature on the effects of sport participation at the high school level in relation to academic achievement and performance. More specifically, various effects on grade point average (GPA), graduation and dropout rates among athletes will be reviewed.

#### **Athletic Participation and Academic Achievement**

According to Ryska (2003), it is important to recognize the manner in which participation in competitive high school sports contribute to the development and enhancement of a student-athlete's behavior and habits outside the realm of sport. Bradley and Conway (2016), believe that, "Being part of an organized school team, practicing several times per week and representing the school competitively will promote self-esteem, self-concept and social capital within the student and develop a strong level of school connectedness" (p. 712-713). It is characteristics like these that are built and reinforced through athletic participation, along with motivation, perseverance, self-control, coping, and creativity that are thought to emphasize success in an academic setting (Bradley & Conway, 2016).

#### **Grade Point Average**

Lumpkin and Favor (2012) examined the comparison of the academic results between athletes and non-athletes. The study included a total of 139,349 student participants, all of which were currently enrolled in grades 9-12 in Kansas High Schools. Out of the 139,349 students, 62,297 of them were actively participating on a school organized sports team. Data were obtained through the Kansas State Department of Education (KSHSAA) master roster of students and from the Kansas State Department of Education (KSDE). The type of data collected was students' grade point averages (GPAs), both graduation and drop out rates, and state assessment

results and ACT scores. All data that was obtained was examined allowing differences to be recognized between athletes and non-athletes. This study concluded that athletes outperformed non-athletes in several academic areas including GPA, state assessments, and the mathematics and science portions of the ACT (Lumpkin & Favor, 2012).

Chen, Mason, Middleton, and Salazar (2013) researched the recurring patterns of traditionalized test scores among student athletes compared to their non-athlete counterparts. There were 186 student-athletes who voluntarily took part in this study, 125 males and 61 females. Participants filled out an 11 question behavioral survey, in addition to providing their student identification number. This number allowed access to each student's ACT scores, SAT scores, and grade point averages which were then matched to their completed surveys. While the results showed no significant variation in test scores between athletes and non-athletes, they did demonstrate that student athletes spent more time studying than non athletes (Chen et al., 2013). In addition, no correlation was found between time spent on athletic participation and diminished academic performance.

Schultz (2015) looked at athlete's grades, but more specifically the comparison between grades during the season and in the off-season. This research aids in providing information on whether or not participating on a sports team takes time and effort away from student-athletes academic efforts, or serves as a motivating force to achieve more in the classroom. Data for this study was compiled during the years 2006-2011 from multiple large suburban Midwestern, high schools. Twenty-one different sports were studied through each high school, each offering both a junior varsity and varsity level of competition. Detailed information was collected on the sport the student played, the level in which they participated (JV or varsity), and which season participation took place. This data was then compared to academic transcripts, which contained

details of every enrolled class and grade received through the participants' high school years. The results showed no significant change between athlete's in-season and off-season GPAs, and also found no evidence that athletes alter or simplify their course load during their season or seasons (Schultz, 2015).

Dyer, Kristjansson, Mann, Smith, and Allegrante (2017) examined the connection linking sport participation and academic performance among a sample of youth. All reachable students within two mid-Atlantic high schools took part in the study. A total of 1,317 students in grades 9-12 participated in 2014, along with 1,500 students in 2015. Data was collected through the School of Public Health at West Virginia University as part of the Integrated Community Engagement (ICE) Collaborative in West Virginia. Analyses on data collected through student identification numbers and reported grades were done using SPSS 23.0 for Windows. The results present a positive connection between supervised sport participation and academic achievement among high school aged students (Dyer et al., 2017).

Trudeau and Shepard (2008) also conducted a study to reflect on and report the relationship between academic achievement and a few factors associated with school-based physical activities, including school sports. This was done through an extensive, systematic review of currently available literature from databases such as PSYCHINFO, MEDLINE, GOOGLE.SCHOLAR, and ERIC. The results demonstrated that students were allotted up to one added hour daily on extra curricular activity, such as a school-based sport, without participation negatively affecting their academic performance. Additionally, it was found that participation in an extra curricular activity that includes physical activity (school sport) results in an increased academic performance and higher grade point averages among student-athletes. This was found

to be largely due to positive correlation between participation and increased memory, concentration, and conscientious classroom behavior (Trudeau & Shepard, 2008).

Lastly, a study done by Ward (2008) sought to determine the effects on academic performance at both the individual and organizational level, based on school investment in athletics. Information was gathered from the Arkansas Department of Education, and included 227 schools out of the 254 Arkansas school districts. Information such as financial reports and report cards were collected. Multiple regression analyses were conducted. While these results revealed no academic boost through athletic involvement at the district level, there was also no negative correlation found between athletic involvement and academic outcomes. However, the study does suggest that at the individual level, independent from the district, participants may see educational benefits due to their participation (Ward, 2008).

### **Graduation and Dropout Rates**

In a study done to address the rising concern of youth over scheduling, Fredricks (2012) examined whether increased involvement in extracurricular activity, more specifically school sports, warrants any harmful academic outcomes. This study was conducted through the use of data obtained from the Educational Longitudinal Study of 2002, a longitudinal study directed by the National Center for Educational Statistics (NCES). A total number of 15,362 students from 752 different schools participated in the two-stage sampling process. The relationship between extensiveness and intensity of participation at 10<sup>th</sup> and then again at 12<sup>th</sup> grade was measured through multivariate regressions models. The results found that participating in an extracurricular activity (i.e. school sport) is positively correlated to higher educational expectations and educational status. Fredricks (2008) study also concluded that, “extracurricular involvement can

increase youths' sense of belonging and commitment to school and reduce their likelihood of dropping out of school" (pg. 304)

Knifsend and Graham (2012) examined the relationship between adolescent activity involvement of 11<sup>th</sup> graders to the development of a sense of belonging at school and academic engagement. The investigation stretched over a one-year span, inspecting the participants in both 11<sup>th</sup> grade and then again during their 12<sup>th</sup> grade year of high school. It was determined that students who participate in at least two extracurricular activities throughout the academic year develop both higher academic commitment and a stronger sense of belonging at school. The outcomes propose that through engaging in the suggested number of activities, which is a minimum of two, it can promote academic engagement which serves as a shielding factor, "against dropping out of school prematurely" (pg. 386). Youths that are educationally involved are less likely to drop out and more likely to complete their high school education (Knifsend & Graham, 2012).

DeMeulenaere (2010) interviewed four students from public schools in an urban school district in northern California, as well as their families and friends to gain a better understanding of their sport involvement and how it helps in navigating challenges in developing a positive and successful identity as a student. Their participation in a school sport became a powerful and motivating factor when it came to their growth of college aspirations. The study found that through athletic involvement students were given incentives to succeed academically and a more structured high school experience over all. The students having high college aspirations lead to increased odds of completing school and graduating, opposed to dropping out (DeMeulenaere, 2010).



Hwang, Feltz, Kietzmann, and Diemer (2013) inspected the associations among athletic involvement of high school student-athletes in relation to educational expectations and achievement. A total of 12,144 participants were selected from the National Education Longitudinal Survey-88. Each participant completed a survey focusing on an extensive range of factors including social backing, extracurricular participation, athletic identities, and educational expectations and achievement. The results of this study show that participating in athletics has no negative effect on academic outcomes, rather it is positively connected to the development of both an athletic and academic identity (Hwang et al., 2013). The development of these identities through athletic engagement leads to an increase in graduation rates through heightened levels of educational attainment.

Chen et al. (2013) looked at test scores and behavioral information of student athletes to determine their potential of balancing athletic participation and achieving academic success. The findings of this study presented no association between time spent on athletics and poor academic performance or increased possibility to dropout. Student-athletes are capable of maintaining both well-balanced academic and athletic lives (Chen et al., 2013).

Lastly, a study done by Lumpkin and Favor (2012) looked at a comparison of the academic results between athletes and non-athletes, with a focus on graduation and dropout rates. The study included a total of 139,349 student participants, all of which were currently enrolled in grades 9-12 in Kansas High Schools. Out of the 139,349 students, 62,297 of them were actively participating on a school organized sports team. Data was obtained through the Kansas State Department of Education (KSHSAA) master roster of students and from the Kansas State Department of Education (KSDE). The type of data collected was students' grade point averages both graduation and dropout rates, and state assessment results and ACT scores. This study

concluded that athletes did graduate at a much higher rate compared to their non-athlete counterparts: the athletes' graduation rate being 98% versus the 88% of non-athletes. The results of this study also found that the likelihood of non-athletes dropping out of school was significantly higher (15 times more likely) than that of athletes. During the study (2008-2009) 1,955 non-athletes dropped out of school compared to only 126 athletes (Lumpkin & Favor, 2012).

### **Summary**

The purpose of this chapter was to present a review of literature on the effects of sport participation at the high school level in relation to academic achievement and performance. The first objective was to review the literature on athletic participation in association to high school student-athlete grade point average. The second objective was to review the literature on high school athletic involvement and the effects participation has on both graduation and dropout rates. After completing research on the academic effects that athletic participation has on those who choose to participate, it is concluded that participation on a high school sports team did in fact contribute positively to student-athlete's academic achievement. While there are significant positive associations between high school athletic involvement and increased educational success, more research needs to be conducted to gain a better understanding on the potential effects related to athletic participation.

#### **Chapter 4:** *Discussion, Recommendations for Future Research*

The effect of sport participation on high school student-athletes on academic achievement was reviewed in this synthesis project. The research question focused on participation in interscholastic athletics at the high school level and the correlation to academic performance. Based on the review the following conclusions were discovered. There were numerous positive effects on academics for students who participated on a sports team during their high school years compared to their non-athlete counterparts. There was significant evidence showing that participation in high school athletics has a direct effect on increased academic performance.

#### **Discussion**

The research demonstrated that students who made the decision to participate on a sports team during their high school years gained more academically than the students who did not participate. Researchers provided sufficient information in order to establish the importance and the strength of this relationship. The results showed that overall athletes do outperform non-athletes in numerous academic measures. To participate in a school sport requires athletes to maintain eligibility, which serves as a driving force to excel academically. Student-athletes gain and typically enjoy a higher status and are encouraged and commended for their efforts more so than non-athletes. Sports participation can also contribute to character development, teaching participants valuable skills such as time management, and improving on areas such as discipline and dedication (Lumpkin & Favor, 2012). Parents, coaches, and administrators must ensure that time spent competing and practicing does not become excessive, and lead to insufficient time to spend on academics. It is essential that a workable and balanced athletic and academic life is achievable for student-athletes, and is encouraged and upheld by individuals whom support and surround them (Chen et al., 2013). Overall the results and findings of this synthesis demonstrate

and support the idea that an increase in educational attainment can be predicted through athletic participation.

### **Recommendations for Future Research**

The review of literature and the research done for this synthesis revealed several recommendations for future research to obtain additional valuable data on the topic. Future research related to the effects on academic achievement through involvement in high school athletics is advised. While research has provided details and offered knowledge into the topic, more research needs to be conducted in order to further analyze the possible outcomes.

The first recommendation would be to conduct more studies that include a wider range of geographical areas. Dyer et al. (2017) only collected data from two mid-Atlantic high schools. While Lumpkin and Favor (2012) collected their data only from high schools within the state of Kansas. Collecting data from specific regions or areas may create results that are not accurate to the general population or other areas of the country. While these studies provide baseline and generalized information on the topic, additional studies should be done in a larger variety of areas to gain a stronger understanding.

A second recommendation would be the inclusion of the source of motivation to participate in a sport at the high school level. The relationship between participation and academic achievement may vary for each individual student-athlete based on their own personal motive to play a sport. A student who is participating on a sports team for extrinsic reasons such as parental or peer pressure is more likely to see fewer positive educational outcomes oppose to a student who is participating for their own intrinsic reasons. Additional research on motivational sources and drive to participate could lead to more accurate results.

An additional recommendation for future research would be to conduct more studies that reflect more thoroughly on the ever-changing climate of youth and high school sports. The intensity and dedication to excel in high school sports has greatly changed over the years. Parents and coaches are identifying their own and other people's children as potential future star athletes at earlier ages. This phenomenon has the potential to lead to an earlier and more significant recognition with an athletic identity along with a heightened desire to achieve academically. With this occurrence, conducting additional research on this relationship may lead to increased knowledge of the changing aspirations of educational attainment of student-athletes.

Appendix A  
Article Grid

### Synthesis Article Grid

Author	Title	Source	Purpose	Methods & Procedures	Analysis	Findings	Recommendations
Bradley & Conway (2016)	A dual step transfer model: Sport and non-sport extracurricular activities and the enhancement of academic achievement	British Educational Research Journal	Explore the influence that school sport and non-sport extracurricular activities (ssEC and nsEC) can have on academic achievement.	Literature search for studies investigating the influence of ssEC and nsEC activities on academic achievement. Secondary analysis of larger surveys	Literature review, JSTOR database	Any school EC activity that is performed competitively in an organized school environment, practiced several times per week and with strong school representation may enhance the development of non-cognitive skills, and thus enhance academic achievement.	Being part of an organized school team at a higher level of competition will promote self-esteem, self-concept, and social capital within the participant and will help in developing a strong level of school connectedness.

Chen, Mason, Middleton, & Salazar (2013)	An Examination of Behavioral Data and Testing Scores as Indicators of Student-Athletes' Academic Success	Kentucky Newsletter for Health, Physical Education, Recreation & Dance	Examine behavioral data and testing scores to verify the best indicators of student-athletes' academic performance for balancing academic achievement and athletic participation.	186 voluntary student-athletes (125 males, 61 females) testing scores (American College Testing, ACT and Scholastic Assessment Test, SAT), grade point average (GPA), and the behavioral data.	11-item daily life behavioral survey. Data form contained three types of numbers: (a) a designated number for each participant, (b) the behavioral data in number of hours, and (c) test scores.	Results suggest that the use of daily activity and behavioral data could reveal appropriate indicators of student-athletes' academic performance.	Each institution should promote and extend its academic learning and counseling services to more student-athletes.
DeMeulenaere (2010)	Playing the Game: Sports as a Force for Promoting Improved Academic Performance	Journal of Cultural Diversity	Examine six ways that student involvement in sports promotes student success. And	Students who were open to on-going involvement in the study: Four students,	Observations in the schools and homes. Multiple interviews conducted with each student. All	Sports represent only one vehicle for promoting urban students' successful	Sport participation will provide a motivation for struggling student-athletes, as it offers a justification for academic effort.



	for Urban Youth		how students use their involvement with sports to negotiate the challenges they face in adopting a student identity.	family members, teachers, coaches, tutors, and friends. Over two-year study.	interviews were recorded and later transcribed.	academic performance. Highlights the important role sports play in urban youth negotiating the conflicted contexts they inhabit on a daily basis.	
Dyer, Kristjansson, Mann, Smith, & Allegrante (2017)	Sport Participation and Academic Achievement: A Longitudinal Study	American Journal of Health Behavior	Examine the relationship between sport participation and academic achievement in a sample of adolescents, while accounting for socioeconomic status and sex.	Survey data was collected by teachers under the supervision of a school contact agent (SCA) that operated as a liaison to the research team. Students in 2 mid-	SPSS 23.0 for Windows, Analysis of Covariance (ANCOVA)	Partial evidence. Sport participation was positively related to academic achievement. Findings differed when students were compared across sex and by	Supervised sport participation, which includes a component of physical activity as well as social engagement, can play a role in academic achievement among adolescent high school students.

				Atlantic high schools participated in the study in the fall of 2014 and fall of 2015. 1317 participants for 2014 and 1500 participants for 2015.		parental education. Sport participation only predicted math grades for male athletes, and only positively predicted English grades among participants whose parents had at least some college experience	
Fredricks (2012)	Extracurricular Participation and Academic Outcomes: Testing the Over-	Journal of Youth & Adolescence	Examine the association between both the breadth (number of activities) and intensity (time in	Data from the Educational Longitudinal Study of 2002. Eligible schools	The analyses were conducted using Mplus 6.1, which uses full maximum likelihood	Few American high school students are overscheduled in activities. Participation	Parents and teachers should pay attention to signs of stress and that the child has taken on too much. These findings along

	Scheduling Hypothesis		extracurricular activities) of extracurricular participation in 10th grade and academic adjustment over time.	were randomly selected, provided with sophomore enrolment list. This resulted in a total of 752 schools and 15,362 student participants.	(FIML) to handle missing data.	in extracurricular activities is associated with favorable academic adjustment, though there is a point at which greater involvement is not associated with increased benefits.	with prior research support recommendations for encouraging extracurricular participation as a means to promote positive youth development and academic achievement
Hwang, Feltz, Kietzmann, & Diemer (2016)	Sport Involvement and Educational Outcomes of High School Students: A Longitudinal Study	Youth & Society	Examine the relations among sport involvement and social and personal influences on high school students' educational expectations	8th-grade students in 1988, original sample were resurveyed again in 1990 when participants were in 10th grade, in	Literature Review	Sport participation is related to the formation of an academic identity, which was predictive of both youths' educational	Students should successfully integrate both roles because it implies that students are better able to experience academic success and psychological

			and attainment.	1992 participants were 12th grade, in 1994 (2 years after high school), and in 2000 (8 years after high school).		expectations and attainment. Only a positive association shown with Whites and Hispanics.	well-being in school.
Knifsend & Graham (2012)	Too Much of a Good Thing? How Breadth of Extracurricular Participation Relates to School-Related Affect and Academic Outcomes During Adolescence	Journal of Youth & Adolescence	Examine how the breadth of activities in which an adolescent is involved relates to school-related affect and academic performance.	The final sample consisted of 864 11th grade students. 55.9% of the sample was female. Eleventh graders (i.e., high school juniors) ranged from 16 to 18 years old.	Surveyed in spring of 11th grade and spring of 12th grade during the middle of each academic term. Written questionnaires . Multiple regression models, descriptive analyses.	Participating in a moderate number of different types of activities (i.e., two activity domains) may be most optimal for helping adolescents to feel connected to their school and to do	A diverse portfolio including a couple of different types of activities may promote better adjustment, relative to lower or higher levels of involvement. adolescents can explore a couple of different types of activities, and parents or guardians can encourage their

						well academically.	children to engage in multiple areas of interest.
Lumpkin & Favor (2012)	Comparing the Academic Performance of High School Athletes and Non-Athletes in Kansas in 2008-2009	Journal of Sport Administration & Supervision	To make comparisons between athletes and non-athletes on GPAs, graduation rates, dropouts, ACT test scores, and state assessments, some gender, ethnicity, and grade comparisons.	Master roster of students who participated in high school sports during 2008-2009 and academic data from the Kansas State Department of Education.	Questionnaires, test results, ACT scores, MANOVA, ANOVA	High school athletes in Kansas reported higher grades, higher graduation rates, lower numbers of dropouts, higher ACT scores, and higher state assessment scores on all tests than did non-athletes.	Instead of cutting extracurricular activities school administrators should financially support these activities because they help students stay in school and succeed academically.
Ryska (2003)	Sport Involvement and Perceived Scholastic Competence	International Sports Journal	To determine the multivariate relationship between the	235 public high school students, 128 males and 107	The Task and Ego Orientation in Sport Questionnaire	Sport involvement characterized by a task orientation,	Intervention strategies should specifically target at-risk populations such as the female

	in Student-Athletes: A Multivariate Analysis		sport involvement factors of task motivation, ego motivation, sport confidence, athletic identity, and the scholastic competence perceptions of student-athletes.	females. Ages ranged from 14-18 years old, 9 <sup>th</sup> -12 <sup>th</sup> grades. Basketball, soccer, swimming, football, volleyball were selected for analysis.	(TEOSQ), Trait Sport Confidence Inventory (TSCI), Athletic Identity Measurement Scale (AIMS), Perceived Locus of Causality Scale (PLOC), Self Perception Profile for Adolescents (SPPA).	social identification, and relative autonomy appear to be associated with greater scholastic competence among both male and female student-athletes	student athletes who demonstrated an ego orientation, low athletic identification, and lack of self-determined behavior in her sport involvement.
Schultz (2015)	Do High School Athletes Get Better Grades During the Off-Season?	Journal of Sports Economics	Determine whether an athlete performs better or worse, academically, during the season in which they participate in	Data collected from several large suburban Midwestern high schools spanning academic years 2006–2011 and	Regression analysis, summary of key variables.	Differential effects of participation in sports by the level of participation. There are very small academic costs to participation	One should not be greatly concerned that participation in athletics takes too much time from academics as these negative effects are small and only occur for a subset of athletes at the

			sports, focusing on the time allocation theory of participation.	match academic transcript data to student level sports participation records.		for varsity athletes, while JV athletes see small academic improvements in-season.	highest level of participation. The small academic costs of participation estimated for varsity athletes are likely outweighed by the larger estimated effects of sports participation
Trudeau & Shepard (2008)	Physical Education, school physical activity, school sports and academic performance	International Journal of Behavioral Nutrition & Physical Activity	Review relationships of academic performance and some of its determinants to participation in school-based physical activities, including physical education (PE), free	Systematic review of currently available literature	Literature review, MEDLINE, PSYCHINFO, ERIC databases. Cross-sectional studies	School PA (sport) could become a consistent component of PA to meet current guidelines for children and adolescents without impairing academic achievement. Likely to increase attachment to	Academic achievement, physical fitness and health of our children will not be improved by limiting the time allocated to PE instruction, school PA and sports programs.

			school physical activity (PA) and school sports.			school and self-esteem which are indirect but important factors in academic achievement.	
Ward (2008)	Athletic Expenditures and the Academic Mission of American Schools: A Group-Level Analysis	Sociology of Sport Journal	Explore the influence of athletic investment on academic achievement at the organizational level.	Data obtained for this study from the Arkansas Department of Education. Sampling frames included databases of financial reports and school district report cards. Analysis consisted of 227 Arkansas	Regression analysis, descriptive statistical reports	Revealed no evidence that athletics boost academic achievement at the district level as predicted by many studies conducted at the individual level of analysis. School districts neither lose nor gain an academic performance advantage	Opting to invest more money in athletics neither supported nor undermined the academic mission.



				school districts in 2004–2005.		when they shift proportions of the budget from academics to athletics.	
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