

High School Athletic and Extracurricular Participation Related to Academic Achievement and
School Engagement

By

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ABSTRACT

The current study looked at how participation in athletics and/or other extracurricular activities correlated with academic achievement and student engagement in high school. The study involved 150 college students reporting about their high school experiences. Retrospective data points were used to look for significant correlations. Athletic participation and extracurricular participation were measured using author-created checklists. Grade point average (GPA) also was measured using self-reported data. The Behavioral-Emotional-Cognitive School Engagement Scale (BEC-SES) measured school engagement (Li, 2010). No data were found to support the study's 6 hypotheses. However, it was found that students who participated in high school sports had higher Emotional School Engagement scores than students who participated in community sports or did not participate in sports. Females had higher self-reported GPAs than males. Finally, females had higher BEC-SES Total, Behavioral, and Cognitive School Engagement scores than males.

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CHAPTER I

INTRODUCTION

Overview

The present study looked at how interscholastic athletic and extracurricular participation correlate with academic achievement and student engagement in high school. College students reported on their high school interscholastic sports participation, extracurricular nonsport participation, academic success in high school, and student engagement. Retrospective data points were used to look for significant correlations.

Sports participation is the most popular form of extracurricular activity among high school students (Feldman & Matjasko, 2005). According to the 2014-2015 High School Athletics Participation Survey conducted by the National Federation of State High School Associations (2015), There are 7,807,047 students participated in high school sports in the 2014-2015 school year. This number has steadily grown each year for over 20 years (National Federation of State High School Associations, 2015). Feldman and Matjasko (2005) conducted a seminal literature search of adolescent extracurricular participation. The researchers narrowed their study to include only research conducted in the United States and research involving school-based activities. In their literature review, Feldman and Matjasko found that sports participation in high school is the most popular form of extracurricular activity. Therefore, it is potentially valuable to know of any positive and negative correlates of interscholastic high school sports and extracurricular participation.

Students who participate in sports and in other extracurricular activities have been found to score higher on school engagement measures than students who are not involved in extracurricular activities (Forneris, Camiré, & Williamson, 2015). Besides school engagement, there are also potential academic benefits associated with participation in sports. Students who participate in sports often are motivated to not only do well in high school, but also often aspire to go to college (DeMeulenaere, 2010). Fredricks and Eccles (2006) found that sports participation predicted higher self-reported grade-point averages (GPAs) and higher educational expectations in the 11th grade. Fox, Barr-Anderson, Neumark-Sztainer, and Wall (2010) discovered support for the prediction that high school sports participation would be positively correlated with self-reported high school grades in both boys and girls.

However, not all researchers have found unique correlations between high school sports participation and academic achievement. Although Dick (2010) did find there was a significant, positive relationship between student participation in extracurricular activities (including sports) and high school GPAs, he did not find a difference between the GPAs of high school students participating in sports activities and students participating in extracurricular nonsport activities. Based on the conclusion of the studies mentioned above, it is not clear whether the correlations between sports and extracurricular participation and academic achievement reflect consistently significant relationships (Rees & Sabia, 2010). In this sense, it is important to understand the correlations associated with high school sports participation because that is how many American high schoolers spend their free time.

Theoretical Grounding

The theoretical grounding for the current study comes from research dealing with school engagement. According to Fredricks, Blumenfeld, and Paris (2004), there are three areas that together constitute school engagement: behavioral engagement, emotional engagement, and cognitive engagement. Behavioral engagement most closely relates to the current study because it involves participation. Participation can include academic, social, or extracurricular activities, such as high school sports. Behavioral engagement is considered important for students to achieve positive academic success and to help prevent students from dropping out of high school (Fredricks et al., 2004). Emotional engagement refers to students' reactions and attitudes toward their teachers, classmates, school environment, and academics. Emotional engagement is considered important for students to create ties to their school, and it may influence students' motivation to do their work (Fredricks et al., 2004). Cognitive engagement refers to students' investment in their academics and in their school. It is seen as the student's willingness to exert the necessary effort to master complex academic concepts and skills (Fredricks et al., 2004). Although the researchers described three important aspects of school engagement, they concluded that it is meaningful and important to study school engagement as a global concept that is multifaceted and includes parts of all behavioral engagement, emotional engagement, and cognitive engagement.

Additionally, Fredricks et al. (2004) state school engagement appears to be malleable. Students' school engagement may be improved by various social or academic opportunities in the school or classroom. Various studies have found that participation in high school sports is associated with higher school engagement (e.g., Camiré & Trudel,

2013; Forneris et al., 2015; Stokvis, 2009). School engagement also has been found to be associated with higher academic achievement (e.g., Chase, Hilliard, Geldhof, Warren, & Lerner, 2014; Connell, Spencer, & Aber, 1994; Li, 2010; Wang & Holcombe, 2010).

The current study proposes that high school students who participate in school sports will have higher school engagement than students who do not participate in school sports, and, therefore, better academic outcomes, based on school engagement research.

Sports and Positive Student Development

Sports participation has been linked to positive aspects of child development in general. Because participating in high school sports is so prevalent in American high schools, it is important to understand the developmental aspects associated with high school sports participation. Participating in high school sports relates to many positive benefits on overall student development. Fredricks and Eccles (2006) conducted a study examining the relationship between high school participation in various extracurricular activities and developmental outcomes for the adolescents. The participants came from the Maryland Adolescent Development in Context Study. There were 5 waves of data collection in the total study, but this study used the 3rd, 4th, and 5th waves. The 3rd wave was conducted when the students were in 8th grade, and there were 1,060 participants. The 4th wave was conducted when the students were in 11th grade, and there were 1,075 participants. Finally, the 5th wave was conducted one year after the students completed high school, and there were 912 participants. The specific areas the researchers examined were school activity participation, academic and psychological adjustment, risk behavior, and civic engagement.

Based on the results, Fredricks and Eccles (2006) designated three activity constructs: school clubs, organized sports, and prosocial activities. The researchers found a multitude of positive benefits correlated with sports participation. For example, in the 11th grade, athletes had lower levels of depression, lower levels of internalizing behavior, and higher levels of self-esteem than did nonathletes. Sports participation also predicted lower externalizing behavior for boys, and athletes reported lower alcohol use than nonathletes. However, in the results from the 5th wave of data collection (one year after high school completion), Fredricks and Eccles (2006) reported that gender moderated the relationship between 11th grade sports participation and alcohol use at one year after high school. Specifically, participation in high school sports predicted higher alcohol use two years later for girls when compared to nonparticipants. However, for boys, there was no significant difference in alcohol use between sports participants and nonparticipants. These results indicate that participation in high school sports is correlated with many positive developmental aspects, but it is also correlated with higher alcohol use in females after completion of high school.

Broh (2002) conducted a study to examine the relationship between high school sports participation and student achievement, development, and social networks. He also wanted to determine if the educational benefits of high school sports participation were unique to sports or if nonsport extracurricular activities had similar correlations. Broh obtained participants using the National Education Longitudinal Study of 1988 (NELS:88) data. There were 12,578 participants total, and the participants had to have participated in the base-year survey in eighth grade, remained in school through 12th grade, and have available valid measures for math and English grades and math and

reading test scores. The researcher used data collected in the NELS:88 study along with self-created measures for sports participation and student development. Similar to what Fredricks and Eccles (2006) found, Broh discovered that sports participation in 10th- and 12th-graders was associated with an increased self-esteem. Sports participation also was associated positively with how much time the students reported spending on homework and a more internalized locus of control. Importantly, Broh also found playing sports in 10th and 12th grades significantly increased social ties between students and parents, students and the school, parents and the school, and among parents. In addition, playing sports was positively correlated with increasing student athletes' number of academically oriented friends. This study is an example of the many different positive benefits associated with playing sports in high school.

Forneris, Camiré, and Williamson (2015) looked at the differences among certain developmental assets between participants in interscholastic sports teams versus non-athletes. These researchers used the Search Institute's (2016) term *developmental assets* to mean "a set of skills, experiences, relationships, and behaviors that enable young people to develop into successful and contributing adults" (Developmental assets, para. 1). Forneris et al. used a modified version of the Developmental Assets Profile (Search Institute, 2016) to measure the high school students' developmental assets. The developmental assets included were support, empowerment, boundaries and expectation, commitment to learning, positive values, social competencies, and positive identity. These researches included 239 high school students from Southern and Eastern Ontario. The students were split into four groups: sports only, extracurricular activities other than sport, both sports and other extracurricular activities, and no involvement in any

extracurricular activities. The researchers created an online questionnaire that included a demographic section, a section with the modified developmental assets profile, and a section with a 10-item school engagement questionnaire.

Fornieris et al. (2015) found students who participated in both sport and other types of extracurricular activities scored significantly higher than students who were not involved in any type of extracurricular activities on all of their measures of empowerment, positive values, social competencies, and positive identity. Students who participated in both sport and other types of activities and students who participated in only sport scored significantly higher on a measure for commitment to learning compared to youth not involved in extracurricular activities.

Another study that found sports participation correlates with positive student development was conducted by Pearson, Crissey, and Riegle-Crumb (2009). The researchers obtained participants through the National Longitudinal Study of Adolescent Health (Add Health) and the linked Adolescent Health and Academic Achievement (AHAA) transcript study. There were 5,447 total students between 9th and 11th grade. The researchers used the In-School survey and high school transcripts to measure sports participation. The other measures used in this study were constructed by the authors. The measures included school attachment, teacher attachment, disengagement from school, extracurricular participation, perceived intelligence, self-esteem, and educational expectations. Grade point average also was measured using the students' high school transcripts. Pearson et al. reported both high school boys and girls who participated in sports compared to boys and girls who did not participate in sports had higher levels of perceived intelligence and self-esteem, were more integrated in their schools, and had

stronger academic orientations. Therefore, according to the Pearson et al. study, high school students who participated in sports demonstrated a host of interpersonal benefits compared to high school students who did not participate in sports.

Blomfield and Barber (2009) conducted a study that looked at scores from self-concept measures related to extracurricular participation. The researchers studied high school students from 26 high schools in Western Australia and measured academic self-concept, social self-concept, and general self-worth. The participants were divided into four groups: no participation, activities only, sports only, and mixed participation. The total sample included 1,489 students. Extracurricular activity participation was measured using a questionnaire, and students checked what sports or non-sport activities they participated in during high school. Marsh's Self-Description Questionnaire I, II, and III (Marsh, 1992a, 1992b, 1992c) were used to measure academic self-concept, social self-concept, and general self-worth.

The results of the Blomfield and Barber (2009) study showed that members of the mixed participation group (students involved in both sports and clubs) had the highest academic self-concepts compared to the other three groups. More specifically, members of the mixed participation group had higher social self-concept compared to the other three groups, and members of the sports-only group had higher social self-concept than members of the no-participation group.

An additional finding of the Blomfield and Barber (2009) study was that members of the activities-only group had higher academic self-concept than members of the no-participation group. Members of the sports-only group did not differ significantly for academic self-concept from the activities-only group or the no-participation group.

When social self-concept was the dependent variable, members of the sports-only and activities-only groups did not differ significantly, nor did members of the activities-only group and the no-participation group. Finally, members of the mixed participation group had higher general self-worth compared to the other three groups. Members of the sports-only and activities-only groups had higher general self-worth than members of the no-participation group. Likewise, members of the sports-only and activities-only groups did not differ significantly from each other. Table 1 summarizes these findings. In conclusion, these results demonstrate that participating in sports and other extracurricular activities correlated with more positive outcomes than just participating in sports or extracurricular activities only. Finally, participating in any activity correlated with positive outcomes more frequently compared to nonparticipation.

Denault and Poulin (2009) expanded our understanding of links between extracurricular participation and success by studying the breadth and depth of student involvement. They studied how the breadth and intensity of youth participation in extracurricular activities related to later development in areas such as academic orientation, civic development, risk behaviors, and internalizing problems. The participants included 299 students from schools in Quebec, Canada. Data collection started when the students were in 6th grade and continued each year until the students were in 11th grade. Activity participation was measured using a free recall procedure, where students told the examiners what school-based or community-based sport and nonsport extracurricular activities they participated in during high school. Students also reported how engaged they were in their activities. Intensity of participation for each activity was measured by multiplying the number of hours per week of participation by

Table 1

Summary of Blomfield and Barber (2009) Results

Participation group	Academic self-concept	Social self-concept	General self-worth
Mixed participation vs. sports-only	Mixed participation > sports-only	Mixed participation > sports-only	Mixed participation > sports-only
Mixed participation vs. activities-only	No difference	Mixed participation > activities-only	Mixed participation > activities-only
Mixed participation vs. no participation	Mixed participation > no participation	Mixed participation > no participation	Mixed participation > no participation
Sports-only vs. activities-only	No difference	No difference	No difference
Sports-only vs. no participation	No difference	Sports-only > no participation	Sports-only > no participation
Activities-only vs. no participation	Activities-only > no participation	Activities-only > no participation	Activities-only > no participation

the number of weeks in a school year. To measure breadth of participation, the researchers split the students into seven activity groups: individual sports, team sports, performance and fine arts, academic clubs and organizations, community-oriented activities, service activities, and faith-based youth groups. Then, the researchers added up how many groups each participant was involved in and defined the resulting total or overall participation. Denault and Poulin measured academic orientation with a composite of grades, educational aspirations, self-perceptions of academic competence, and skipping class. The researchers also measured self-reported self-perception of academic competence, risky behaviors, internalizing problems, depressive symptoms, self-worth, loneliness, and civic development.

The results from the Denault and Poulin (2009) study showed intensity of participation, including engagement in sports, was significantly related to self-reported academic orientation and civic development in 11th grade. This means students who were more intensely involved in all kinds of organized activities had better academic orientation and civic development compared to uninvolved students. Breadth also was significantly related to academic orientation and civic development in the same way intensity was. Students who were involved in more organized activities had better academic orientation and civic development compared to uninvolved students. On the other hand, neither intensity nor breadth were significantly related to fewer risky behaviors or fewer interpersonal problems. The study did not report correlations or means for each activity group related to the four outcome variables, so more detailed relationships could not be assessed.

Blomfield and Barber (2010) conducted a study examining the relationship between extracurricular activity participation in high school and indicators of positive and negative development. The participants were 98 high school students from Western Australia. The students' activity participation was split into five groups: team sports, individual sports, performance, community, and school involvement activities. The students were asked if extracurricular participation influenced who their friends were and how extracurricular participation influenced their selection of friends as well as their engagement in high-risk behaviors (including drug and alcohol use). Blomfield and Barber found students who participated in team sports reported higher rates of alcohol use than students who did not participate in extracurricular activities. They also found students who participated in team sports reported having more friends who regularly drank alcohol compared to students who did not participate in extracurricular activities. Because the participants were not of legal age for alcohol consumption, this was a negative correlate of sports participation.

In summary, the research has shown participating in high school sports is related to a multitude of positive benefits including lower levels of depression, higher levels of self-esteem, lower levels of externalizing behaviors, higher levels of perceived intelligence, and higher levels of social self-concept (e.g., Blomfield & Barber, 2009; Broh, 2002; Fredricks & Eccles, 2006; Pearson et al., 2009). According to Broh (2002) high school sports participation is also correlated with spending more time on homework and increased social ties between students and parents, students and the school, parents and the school, and parents and parents. Forneris et al. (2015) found students who participated in both sports and other extracurricular activities scored higher on measures

of empowerment, positive values, social competencies, and positive identity compared to students who were not involved in any type of extracurricular activity. Finally, Denault and Poulin (2009) found students who were involved in more organized activities had better academic orientation and civic development compared to uninvolved students. However, there have also been studies to find a correlation with high school sports participation and increased alcohol use in girls (Fredricks & Eccles, 2006) and in both boys and girls (Blomfield & Barber, 2010)

Sports and School Engagement

Researchers have found that participating in high school sports is correlated with increased high school engagement. Stokvis (2009) researched the correlations of extracurricular sports comparing American high schools to high schools in the Netherlands. For his U.S. sample, he collected data from interviews with coaches, teachers, school officials, journalists, and high school students in Texas. He also collected data through observation of the various high school sports activities in Texas. He did not sample high school students from the Netherlands. The data from the Netherlands are based on documentary and archival research conducted by the author during earlier research projects. According to Stokvis, in America, high school sports are within the school. Coaches are generally teachers, and money from the school is allocated specifically for sports as well as other extracurricular activities. In other countries, such as the Netherlands, most sports are played outside of the school system within sports clubs. Stokvis concluded that American high schools associated many symbols, rituals, and ceremonies with their athletic programs. Because of these ceremonies, school sports participation, particularly in football, helps students identify

with their high school and team. Based on interviews and observations, Stokvis concluded school engagement benefits are not seen in the Netherlands because high school-age sport is not associated with the schools. This study indicates that by playing school-sanctioned high school sports in the United States, students may feel more connected to their schools.

Camiré and Trudel (2013) conducted a study examining how the participation in high school football correlates with student development by questioning coaches and students. The research was collected qualitatively using semistructured interviews with nine coaches and focus group interviews for 18 students at a private high school in the province of Quebec in Canada. Based on these interviews, the researchers concluded that playing football in high school helped boys develop a connectedness to their high school, remain academically engaged in high school so they could continue playing football, and learn important life skills. Students also stated that playing football gave them a sense of belonging to a team and expanded their social networks. This study shows the unique benefits that can be attained from participating in a high school sports team.

Linver, Roth, and Brooks-Gunn (2009) investigated patterns of adolescents' participation in organized activities, particularly sports involvement, and how those patterns related to youth development. These authors were interested in the academic benefits of sports participation compared to participation in other activities or to no participation in high school activities. The participants in this study were obtained from the Child Development Supplement-II (CDS-II). There were 1,711 5th- through 12th-grade students. Adolescent activities and school connectedness were measured using

survey questions developed for the CDS-II. From the data, the researchers split the adolescents into five clusters according to the groups that each participant reported joining: the sports cluster, the sports plus other school groups cluster, the school groups cluster, the religious groups cluster, and the low involvement cluster. Linver et al. found members of the sports plus cluster, which is students participating in sports and other activities, had more positive outcomes than any other cluster. Compared directly to the sports cluster, members of the sports plus cluster scored statistically significantly higher on the school connectedness measure. The researchers found membership in the sports cluster, or students participating in sports only, was positively associated with social well-being and school connectedness. Members of the sports cluster scored statistically significantly higher on school connectedness than members of the low-involved cluster. However, the sports cluster did not differ significantly on school engagement compared to the school groups cluster or the religious groups cluster. Linver et al. concluded that participation in one activity is better than participating in no activities, and participation in sports plus many other activities is better than participating in only one activity.

Overall, researchers have concluded that participating in sports leads to higher school engagement in high school (e.g., Camiré & Trudel, 2013, Stokvis, 2009). However, Linver et al. (2009) found that students who participate in high school sports and other extracurricular activities have higher school engagement than students who participate in sports only or in other extracurricular activities only. Therefore, the research suggests that participating in one extracurricular activity (including sports) is better than participating in no extracurricular activities, but participating in multiple

extracurricular activities (including sports) leads to the most school engagement in high school.

Nonsport Extracurricular Activities and School Engagement

Researchers also have found that participating in high school extracurricular activities is correlated with increases in school engagement. In the study mentioned previously that examined developmental assets conducted by Forneris et al. (2015), one developmental asset studied by was school engagement. Forneris et al. found that females scored significantly higher than males on the Commitment to Learning scale, which is a scale similar to the Cognitive school engagement subscale of the Behavioral-Emotional-Cognitive School Engagement Scale (BEC-SES). Forneris et al. also found that students involved in both sports and other extracurricular activities had statistically significantly higher school engagement scores than those not involved in any extracurricular activities. There was not a statistically significant relationship for the sports only group or the extracurricular-activities-other-than-sport group with student engagement. Therefore, this study concluded there is not a unique relationship between high school sports participation and student engagement, but there is a relationship with student engagement when students play sports and participate in other extracurricular activities too.

A seminal study conducted by Blomfield and Barber (2010) was previously examined relating to positive aspects of student development. My goal now is to link this study to student engagement, specifically school belonging. School belonging was measured using a 5-item questionnaire developed by Fredricks and Eccles (2005). Blomfield and Barber found that students who participated in any extracurricular

activities had a statistically significantly higher level of school belonging than those who did not. However, in this study, school belonging was not uniquely correlated with participation in any one of the activities: team sports, individual sports, school involvement, performance, or community. Therefore, while participation in extracurricular activities appears to help students feel more connected to their schools, sports participation does not have a unique contribution to this relationship.

In summary, Forneris et al. (2015) found that students who played sports and also participated in other extracurricular activities had higher school engagement scores than students who did not participate in any extracurricular activities. On the other hand, these researchers also found that participants involved in sports alone or extracurricular activities alone had similar high school engagement as students who did not participate in any extracurricular activities.

Sports and Long-Term Academic Aspirations/College Completion

In addition to being related to positive life outcomes and increased school engagement, participating in interscholastic sports also is related to important aspects of long-term academic achievement, such as aspiring to go to college (e.g., DeMeulenaere, 2010) and finishing college (e.g., Troutman & Dufur, 2007). An Australian study conducted by Blomfield and Barber (2010) that measured school belonging, risk behaviors, and friend characteristics also measured academic track (university bound vs. nonuniversity bound) and future academic intentions of high school students. The students reported what academic track they were on and what their plans were when they finished high school. The results from the Blomfield and Barber study indicated that high school females who participated in any school-sponsored extracurricular activity

were more likely to be on the university track, with 83% of those students being from extracurricular participation. On the other hand, only 59% of the nonuniversity-track students were engaged in extracurricular activities. High school females who participated in any school-sponsored extracurricular activity also were more likely to have university aspirations, with 55% planning to attend college compared to only 18% of female high school students who did not participate in any activities.

When the results were separated by individual activity groups, only team sports showed a significant relationship. Female high school students who participated in team sports were more likely to be on the university track, with 63% of those students being from team sports participation. On the other hand, only 30% of the nonuniversity-track students were engaged in team sports. Participation in individual sports, performance activities, community-based activities, and other school involvement activities did not predict being on the academic track. Blomfield and Barber (2010) did not report results for male students. These results indicate that participating in any extracurricular activity for girls is correlated with course selection by enrolling in university-track high school courses, and it is correlated with wanting to attend college for girls. Also, participating in team sports was correlated with preparation for college by taking university-track courses for girls.

A study that measured academic adjustment is the previously mentioned study conducted by Fredricks and Eccles (2006). When participants had been out of high school for 1 year, they reported their educational status or how many years of school they had completed so far. The results showed that students who participated in high school sports in 11th grade had completed more schooling 1 year after high school than students

who did not participate in high school sports (Fredricks & Eccles, 2006). This indicates that sports participation in high school was correlated positively with attending college.

Another study that used college attendance as an outcome variable was conducted by Troutman and Dufur (2007). The researchers examined the relationship between females' high school sport participation and college completion. These researchers also measured educational attainment. The data for female high school sport participation and attainment of a bachelor's degree were taken from the National Education Longitudinal Study (NELS). The NELS started data collection in 1988 when the students were in eighth grade. Follow-up studies occurred in 1990, 1992, 1994, and 2000 when students were in 10th grade, 12th grade, two years out of high school, and six years out of high school. Troutman and Dufur only used data from the first, second, third, and fifth follow-up (1988, 1990, 1992, and 2000). The sample consisted of 5,103 females. Similar to Blomfield and Barber (2010), the results indicated girls who participated in high school sports had higher educational expectations than girls who did not participate in high school sports. Following that trend, girls who participated in high school sports were more likely to have completed college and earned a bachelor's degree six years after graduating from high school than girls who did not participate in high school sports. This correlation remained true even after all individual-level and school-level background variables were controlled for. These authors concluded that female interscholastic sports participation was uniquely correlated with completing college.

DeMeulenaere (2010) conducted an in-depth qualitative analysis to examine how sports participation correlates with successful school performance, and how urban youth can use sports participation to improve their overall school success. The participants

came from a public school in northern California. Although there were only eight students in the study, the in-depth analysis focused on the four students who were identified as participating in sports leagues at school or in the community. DeMeulenaere worked with the participating students for over two years. He collected data through observations in the schools and homes and interviews with the students, and their peers, families, teachers, coaches, and tutors. The interviews were both formal and informal and were later transcribed. The researcher concluded that participants were motivated to attend college because of their school sport involvement. For one participant, DeMeulenaere stated it was obvious that being involved on a community basketball team and being around peers who wanted to attend college made the participant also want to attend college. For other participants, the researcher stated that because the students wanted to attend college to play sports, they also focused on making good grades so they could get accepted into college. DeMeulenaere found that highly successful athletes who were being recruited by colleges had even higher aspirations to go to college. These results indicated that participating in sports was related to students aspiring to attend college. Some aspire to attend college to continue their athletic careers, and others aspire to attend college because their teammates want to go to college.

Another study that looked at college enrollment was conducted by Harris (2014). However, his results differ from what has been previously discussed in this review of literature. Harris conducted his study to examine African American males' high school sports participation and the correlation it has with college enrollment. The data for his study were obtained from the Educational Longitudinal Study of 2002/2006 (ELS: 2002/2006), using only data from the first and third follow-up (2002 and 2006). There

were 155 participants who were all African American males. Data from the first follow-up were used to determine high school sports participation, and data from the third follow-up were used to determine if students had enrolled in college within the previous two years. The results showed that African American males' varsity high school sports participation was not significantly related to attending college. African American males' junior varsity high school sports participation was positively correlated with college attendance, though. The results from this study conflict with other studies that found sport participation was positively correlated with college attendance and even completion (e.g., Fredricks & Eccles, 2006; Troutman & Dufur, 2007).

In summary, the research has shown that although participating in high school sports is often related to many aspects of long-term academic achievement, such as aspiring to go to college (e.g., DeMeulenaere, 2010; Fredricks & Eccles, 2006) and finishing college (e.g., Troutman & Dufur, 2007), this is not always the case (e.g., Harris, 2014). Blomfield and Barber (2010) found that participating in any extracurricular activity for girls is associated with preparation for college by being on the university track, and it is associated with university-aspirations for girls.

Sports and Academic Achievement in High School

One of the main focuses of the present study will be to look at the relationship between participation in high school sports and academic achievement in high school. The previously mentioned study conducted by Fredricks and Eccles (2006) that measured developmental outcomes also measured academic achievement in high school. The researchers measured grade point average (GPA) by asking students in 11th grade about their grades. The results showed that participation in high school sports predicted higher

11th grade GPAs compared to the grades of students who did not participate in any high school sports.

Fox et al. (2010) conducted a study to examine the relationships between participating in sports teams, physical activity, and academic achievement with middle school students and high school students. There were 4,746 middle and high school students from Minnesota included in this study. The results showed participation in high school sports was positively correlated with higher GPAs for both boys and girls. Also, the more high school sports the students participated in, the higher their GPAs were for both high school boys and girls. For high school girls, both moderate to vigorous physical activity and sports team participation were independently associated with higher GPAs. For high school boys, only sports team participation was independently associated with higher GPAs. By finding somewhat different relationships for boys than girls, this study added to conclusions from the study conducted by Fredricks and Eccles (2006).

The study previously mentioned by Broh (2002) examined the relationship between high school sports participation, student development, and participation in social networks also looked at student achievement using the NELS:88 data. The results were that participation in high school sports was positively associated with consistent benefits for the students' grades. High school sport participation was positively correlated with higher math and English grades. Even after controlling for background characteristics, a significant positive correlation between high school sports participation and higher math and English grades persisted. Another interesting finding was that participants who competed in only intramural sports and not interscholastic sports had significantly lower

math and English grades compared to students participating in interscholastic sports. Because of this link, Broh concluded that being involved in the high school by playing sports leads to the most positive benefits for academic achievement.

A detailed qualitative analysis conducted by DeMeulenaere (2010) concluded there was a link between athletes and academic success in addition to academic aspirations mentioned earlier. Using only four students, the author reported that participants in his study were motivated to succeed in school and keep a certain GPA, in part, because they wanted to participate in school sports. This is very similar to the results from a second qualitative study conducted by Stokvis (2009), who compared high school sports in the United States and the Netherlands. He reported that many student athletes in the United States were motivated to do well in school so they could continue playing school sports.

Some studies examining high school sports participation and its relationship with academic achievement have found mixed results. The previously mentioned study by Pearson et al. (2009) examined aspects of positive student development related to participation in high school sports. Also, the researchers investigated the relationship between high school sports participation, academic orientation, and selecting nongender stereotypical courses in high school. Academic orientation was defined as the student's educational expectations and their grades in high school. The researchers looked specifically at challenging courses that historically had clear gender differences in enrollment, including science (male dominated) and foreign language (female dominated). The results showed girls who participated in high school sports were more likely to take a physics course compared to girls who did not participate in high school

sports, even while controlling for academic orientation. However, once academic orientation was controlled, girls who participated in high school sports were no more likely than girls who did not participate in high school sports to take a foreign language course. Boys who participated in high school sports were no more likely than boys who did not participate in high school sports to take a physics course or a foreign language course, once academic orientation was controlled. The findings suggest that while sports may have a significant correlation with females selecting a physics course, overall, academic orientation is the biggest contributing factor in selection of a physics course in high school.

Similar to the study conducted by Pearson et al. (2009), another study that found mixed results between high school sports participation and academic achievement was conducted by Zeiser (2011). This researcher investigated the relationship among high school participation in varsity football among boys and high school participation in varsity basketball among boys and girls in the 10th grade with students' grade point averages and math test scores in the 12th grade. Zeiser also separated the results by race. The researcher used the Education Longitudinal Study (ELS) from 2002 when the students were in 10th grade and 2004 when the students were in 12th grade. The results showed Caucasian high school males who participated in varsity football did not differ from Caucasian male students who did not participate in varsity football in 10th or 12th grade GPA. Also the group of Caucasian high school football players scored worse on reading and math test scores in 10th grade than Caucasian male students who did not participate in varsity football. African American high school males who participated in varsity football also did not differ from African American males who did not participate

in varsity football in 10th or 12th grade GPA or in 10th grade math test scores. Also the group of African American high school football players also scored worse on reading test scores in 10th grade than African American male students who did not participate in varsity football.

Different than the results from varsity football, Zeiser (2011) reported Caucasian high school males who participated in varsity basketball had higher 10th and 12th grade GPAs compared to Caucasian males who did not participate in varsity basketball. This group did not differ in 10th grade reading or math test scores compared to Caucasian male students who did not participate in varsity basketball. African American high school males who participated in varsity basketball did not have different GPAs in 10th or 12th grade compared to African American high school males who did not participate in varsity basketball. This group also did not differ in 10th grade reading or math test scores compared to African American male students who did not participate in varsity basketball.

Finally, Zeiser (2011) reported Caucasian high school females who participated in varsity basketball had higher 10th and 12th grade GPAs and 10th grade math test scores compared to Caucasian females who did not participate in varsity basketball. This group did not differ in 10th grade reading test scores compared to Caucasian female students who did not participate in varsity basketball. African American high school females who participated in varsity basketball also had higher 10th and 12th grade GPAs compared to African American females who did not participate in varsity basketball. This group did not differ in 10th grade reading or math test scores compared to African American female students who did not participate in varsity basketball. The results from the Zeiser study

are mixed. Overall, this author suggest participation in prominent sports, particularly varsity football, may be related to worse academic outcomes for African American male students compared to the White male students who play the same sports. It seems that basketball had better outcomes for academic achievement than football, but the results are different for both sports and for the different races and sexes. The results are summarized in Table 2.

Besides mixed findings with significant results, there also have been studies that found no relationship between sport participation in high school and academic achievement. One such study was conducted by Rees and Sabia (2010). This study examined if the relationship between academic achievement and sports participation in high school and junior high school could be better explained by individual-level differences rather than because of sports participation. The study is not specific to only interscholastic sports participation. The data from this study came from the National Longitudinal Study of Adolescent Health. There were 20,746 students total from 132 different schools across the United States. The results showed there was a positive correlation between sports participation and GPAs, but the correlation could be mediated by individual fixed effects such as motivation, future-orientedness, and self-discipline. Rees and Sabia conclude that relationships among sports participation and important variables are not clear because of unmeasured, individual differences.

In summary, many studies have found positive correlation between high school sports participation and student GPAs, but there have been mixed results. Fredricks and Eccles (2006) found that participation in high school sports predicted higher 11th grade

Table 2

Summary of Zeiser (2011) Results

Participation group	10 th grade GPA	12 th grade GPA	Reading test score 10 th grade	Math test score 10 th grade
Caucasian male varsity football vs. Caucasian male nonparticipants	No difference	No difference	Varsity < nonparticipants	Varsity < nonparticipants
African American male varsity football vs. African American male nonparticipants	No difference	No difference	Varsity < nonparticipants	No difference
Caucasian male varsity basketball vs. Caucasian male nonparticipants	Varsity > nonparticipants	Varsity > nonparticipants	No difference	No difference
African American male varsity basketball vs. African American male nonparticipants	No difference	No difference	No difference	No difference
Caucasian female varsity basketball vs. Caucasian female nonparticipants	Varsity > nonparticipants	Varsity > nonparticipants	No difference	Varsity > nonparticipants
African American female varsity basketball vs. African American female nonparticipants	Varsity > nonparticipants	Varsity > nonparticipants	No difference	No difference

GPA's compared to students who did not participate in any high school sports. Similarly, Fox et al. (2010) found that participation in high school sports was positively correlated with a higher GPA for both boys and girls. Also, the more high school sports the students participated in, the higher their GPA was for both high school boys and girls. Broh (2002) found that high school sport participation was positively correlated with higher math and English grades. Broh also found that participants who competed in only intramural sports and not interscholastic sports had significantly lower math and English grades compared to students participating in interscholastic sports, which suggests high school sports participation has a unique correlation with higher grades. DeMeulenaere (2010) and Stokvis (2009) both found that high school students who participate in sports are motivated to succeed academically and maintain a certain GPA so they can continue to play sports.

On the other hand, there have been mixed results, such as a study conducted by Pearson et al. (2009) that showed that while sports had a significant correlation with females selecting a challenging physics course, overall, academic orientation was the biggest contributing factor to course selection in high school. Zeiser (2011) also found extremely mixed results. Overall, it seemed that basketball had better outcomes for academic achievement than football, but the results are inconsistent by race and gender. Finally, Rees and Sabia (2010) found no relationship between sports participation in high school (not specifically school-sponsored sports) and academic achievement. The results showed there was a positive correlation between sports participation and GPA's, but that the correlation could be explained by individual personality factors such as motivation,

future-orientedness, and self-discipline. These authors concluded that sports participation was not the critical component of the correlations that they found.

Nonsport Extracurricular Activities and Academic Achievement

Some studies have found sport and nonsport extracurricular participation do not differ in their relationship to academic achievement in high school. An example was a study conducted by Dick (2010). This dissertation examined the relationship between participation in different school-supported extracurricular activities with student achievement, attendance, and behavior. The participants in this study were Nebraska high school graduates between the years of 2007-2009. Data about high school sports participation were obtained from the high school's activity office and the school district's data management system as well as official rosters of the players submitted by their coaches. The school district's student management system provided the students' GPAs, attendance records, and behavioral information. The researcher created five groups based on the student data: dual participation (participation in sports and nonsport activities), no participation, nonsport participation, sport participation, and no record of participation.

Dick (2010) found that students who participated in any extracurricular activity had higher GPAs than students who did not participate in any extracurricular activity. Students participating in sports only and students participating in nonsport activities only did not have a significantly different GPA than students with no participation. There also was not a difference among students who participated in sports only, students who participated in nonsport activities only, and students who participated in both. However, these results suggest that participating in extracurricular activities is associated with

higher academic achievement in high school, but the higher academic achievement is not unique to participating in only sports.

Purpose of Current Study

Although school engagement research provides the theoretical basis for the current study, I was particularly interested in how high school sport participation related to high school grade point averages. Fredricks et al. (2004) report school engagement is a global concept that is encompassed by behavioral engagement, emotional engagement, and cognitive engagement. Also, school engagement appears to be malleable and able to be improved by different social or academic opportunities. For example, participating in high school athletics could improve a student's school engagement, which could, in turn, improve their high school grade point average. Multiple studies have found participation in high school sports is associated with higher school engagement (e.g., Camiré & Trudel, 2013; Forneris et al., 2015; Stokvis, 2009), and school engagement has been found to be associated with higher academic achievement (e.g., Chase et al., 2014; Connell et al., 2010; Wang & Holcombe, 2010). The current study expected to find students who participated in high school sports may have higher school engagement, and, therefore, better academic outcomes.

Based on previous research, the present study investigated the relationships between reported participation in high school sports as well as participation in nonsport extracurricular activities and with academic achievement. For example, Fox et al. (2010) found that participation in high school sports was positively correlated with a higher GPA for both boys and girls, and DeMeulenaere (2010) and Stokvis (2009) both found that high school students who participate in sports are motivated to succeed academically and

maintain a certain GPA so they can continue to play sports. However, Pearson et al. concluded that academic orientation is the biggest contributing factor to course selection in high school, and Rees and Sabia (2010) found no relationship between sports participation in high school (not specifically school-sponsored sports) and academic achievement.

My study also examined the relationships between high school sports as well as non-sport extracurricular activity involvement and student engagement. Finally, my thesis investigated the unique relationship of high school sponsored sports participation compared to intermural sports participation related to GPA and school engagement. This comparison makes my study different from many previous studies because past research has not looked at this relationship often. I also wanted to explore gender differences for GPA and school engagement.

Hypotheses

Hypothesis 1. College students who participated in organized high school sports (e.g., junior varsity, varsity) were expected to report better academic achievement in high school compared to the reported academic achievement of college students who participated in community-based sports not sanctioned by the high school and college students who did not participate in organized high school sports. A 3 x 2 ANOVA was used to evaluate Hypothesis 1. The independent variables were sports participation status (organized high school sports, community-based sports, or no sports participation) and gender. The dependent variable was self-reported high school grade point averages.

Hypothesis 2. The second hypothesis aimed to check grades of unusually active students with all of the other participants. To do this, I divided participants into two

groups. The first group consisted of students that reported they had participated in all levels of high school extracurricular activities (e.g., high school sports, extracurricular activities, and sports not sanctioned by the high school). The second group involved all of the remaining participants in my study. This included participants who reported zero involvement in sports or any form of extracurricular activities. The second group also included students who were in high school sports but no other form of extracurricular activity as well as students who participated in official high school sports and extracurricular activities but not sports unsanctioned by their schools. I expected the highly-engaged students to report the highest academic achievement compared to all other groups. A 2 x 2 ANOVA was used to evaluate Hypothesis 2. The independent variables were extracurricular participation (students who participated in organized high school sports, community-based high school sports, and other school-based extracurricular activities vs. students who only participated in one, two, or none of these levels) and gender. The dependent variable was self-reported high school grade point averages.

Hypothesis 3. I used four separate analyses to evaluate Hypothesis 3. College students who participated in organized high school sports (e.g., junior varsity, varsity) were expected to report more school engagement in high school compared to college students who participated in community-based sports not sanctioned by the high school and college students who did not participate in organized high school sports. I used four separate 3 x 2 ANOVAs to evaluate Hypothesis 3. The independent variables were sports participation status (organized high school sports, community-based sports, or no sports participation) and gender. The dependent variables were school engagement as

measured by the BEC-SES Total score, the BEC-SES Behavioral Engagement score, the BEC-SES Emotional Engagement score, and the BEC-SES Cognitive Engagement score.

Hypothesis 4. College students who participated in all levels of high school extracurricular activities (e.g., high school sports, extracurricular activities, and sports not sanctioned by the high school) were expected to have the highest school engagement compared to all other groups. A 2 x 2 ANOVA was used to evaluate Hypothesis 4. The independent variables were extracurricular participation (students who participated in organized high school sports, community-based high school sports, and other school-based extracurricular activities vs. students who only participated in one, two, or none of these levels) and gender. The dependent variable was school engagement as measured by the BEC-SES.

Hypothesis 5. There was expected to be a statistically significant difference in high school academic achievement between college students who participated in any high school extracurricular activity (e.g., sports, band, school clubs, student government) and college students who did not participate in any high school extracurricular activity. A 2 x 2 ANOVA was used to evaluate Hypothesis 5. The independent variables were extracurricular participation (participation in any extracurricular activity vs. participation in no extracurricular activities) and gender. The dependent variable was self-reported high school grade point averages.

Hypothesis 6. There was expected to be a statistically significant difference in school engagement in high school between college students who participated in any high school extracurricular activity (e.g., sports, band, school clubs, student government) and college students who did not participate in any high school extracurricular activity. A 2 x

2 ANOVA was used to evaluate Hypothesis 6. The independent variables were extracurricular participation (participation in any extracurricular activity vs. participation in no extracurricular activities) and gender. The dependent variable was school engagement as measured by the BEC-SES.

CHAPTER II

METHOD

Participants

This study used Middle Tennessee State University's online psychology research pool through Sona Systems. Qualtrics was used to make the questionnaire, which was imported into Sona Systems. The goal of this study was to have 100 participants, and when data collection was complete, there was a total of 163 participants. However, 13 participants had incomplete data, so the final participant total was 150 participants. The only demographic information the participants were asked to report on was their gender for use in testing this study's hypotheses. There were 92 females and 58 males. The participants got credit for participation in my study through Sona Systems. The participants' mean scores on the Behavioral-Emotional-Cognitive School Engagement Scale were not expected to differ from the mean scores found in previous research. A one sample *t* test was used to determine this.

Materials

School engagement. The Behavioral-Emotional-Cognitive School Engagement Scale (BEC-SES) was used in the current study (Li, 2010). The BEC-SES uses a tripartite model of school engagement and has 15 items: five items measuring Behavioral School Engagement (e.g., "How often did you complete homework on time?"), five items measuring Emotional School Engagement (e.g., "I cared about the school I went to"), and five items measuring Cognitive School Engagement (e.g., "I wanted to learn as much as I could at school"). The Behavioral School Engagement subscale was designed to measure students' voluntary behaviors that indicate engagement in the classroom and effort. The

Emotional School Engagement subscale was designed to measure students' sense of belonging toward their school. The Cognitive School Engagement subscale was designed to measure how much students value education and learning. The items were modified to fit the retrospective nature of this study by making the items past-tense instead of present-tense. The BEC-SES uses a 4-point Likert scale for each subscale. The Behavioral School Engagement subscale uses frequency Likert scale (0 = *never*, 3 = *always*), while the Emotional and Cognitive School Engagement subscales use an agreement Likert scale (0 = *strongly disagree*, 3 = *strongly agree*). In a study conducted by Li (2010), the overall reliability of the BEC-SES, using Cronbach's alpha to determine reliability, were all in the acceptable range. This study hypothesized that the BEC-SES means (e.g., Total, Behavioral, Emotional, and Cognitive) in my study's sample would be similar to Li's study's sample. However, when measuring the BEC-SES Total School Engagement, my study's sample scored statistically significantly lower ($p = .02$, $t(149) = -2.37$) compared to Li's sample, and when measuring the BEC-SES Cognitive School Engagement subscale, my study's sample score statistically significantly lower ($p < .001$; $t(149) = -6.34$) compared to Li's sample. My study's sample was not different from Li's sample when measuring the BEC-SES Behavioral School Engagement subscale ($p = .25$; $t(149) = -1.17$) or when measuring the BEC-SES Emotional School Engagement subscale ($p = .13$; $t(149) = 1.53$).

Athletic participation. This study contained two author-created measures to assess high school athletic and extracurricular activity participation and high school grade point average (GPA). To measure high school athletic and extracurricular participation, three checklists were created on the basis of previous research (Blomfield & Barber,

2009; Eccles & Barber, 1999; Filsinger, 2012; Forneris et al., 2015; Fredricks & Eccles, 2005; Knifsend & Graham, 2012). To measure sport participation, the participants marked any sports they participated in for their high school athletics program, and then, using a duplicate checklist, the participants were asked to mark any sports they participated in that were not affiliated with the high school (e.g., church league, club sports, community leagues). The sports included on the checklists were based on the sports offered by the Tennessee Secondary School Athletic Association (TSSAA, 2016). The list of sports can be found in Appendix A. To measure extracurricular participation, the participants marked any extracurricular activities they participated in for their high school. The checklist included extracurricular activities such as clubs, band, and student government, and it was modeled after extracurricular activities offered at Franklin High School in Tennessee and Hickman County High School in Tennessee (Williamson County Schools, 2016; Hickman County School Systems, 2015). The list of extracurricular activities can be found in Appendix B.

Grade point average. To measure GPA, a checklist was created on the basis of previous research (Chase et al., 2014; Li, 2010). The participants indicated the grades they received in high school from mostly below Ds to mostly As. These grades were then coded from .5 – 4.00. The GPA checklist can be found in Appendix C. The participants were also reported their overall high school GPA. The two types of GPA reported were compared using an independent samples *t* test to determine reliability. The two types of self-reported GPA were not statistically significantly different ($p = .93$; $t(298) = .09$). Therefore, the self-reported high school GPA (not the author-created checklist) was used to measure students' overall high school GPAs.

Design

This study used SPSS to analyze the data. I used 3 x 2 ANOVAs, 2 x 2 ANOVAs, independent sample *t* tests, and one-sample *t* tests. For Hypotheses 1 and 3, I used a 3 x 2 ANOVA with the independent variables being sports participation status (organized high school sports, community-based sports, or no sports participation) and gender, and the dependent variables being self-reported high school grade point averages or school engagement as measured by the BEC-SES. For Hypotheses 2 and 4, I used a 2 x 2 ANOVA with the independent variables being extracurricular participation (students who participated in organized high school sports, community-based high school sports, and other school-based extracurricular activities vs. students who only participated in one, two, or none of these levels) and gender, and the dependent variables being self-reported GPA or school engagement as measured by the BEC-SES. For Hypotheses 5 and 6, I used a 2 x 2 ANOVA with the independent variables being extracurricular participation (participation in any extracurricular activity vs. participation in no extracurricular activities) and gender, and the dependent variables being self-reported high school grade point averages or school engagement as measured by the BEC-SES. An independent sample *t* test was used to test if self-reported high school GPAs were similar to the author-created GPA checklist. Finally, a one sample *t* test was used to compare my sample mean to the original sample mean for the BEC-SES.

Procedure

After securing permission to use the BEC-SES, I obtained Middle Tennessee State University Institutional Review Board (IRB) approval. The author approval to use the BEC-SES can be found in Appendix D, and IRB approval can be found in Appendix

E. After IRB approval, the BEC-SES and the two author-created questionnaires were entered into the online survey software, Sona System, by using Qualtrics. Each participant viewed a brief introduction before participating in the study. The introduction included an informed consent and stated the participants could withdraw at any time without losing credit. The participants were thanked for their participation after completing the online survey. Participants remained anonymous to the researcher, and data were stored using Qualtrics. Data gathering stopped once the desired number of participants enrolled. I used SPSS to perform the statistical analyses by exporting the data stored in Qualtrics to the SPSS software.

CHAPTER III

RESULTS

Descriptive Statistics

This study collected the following data: gender (1 = female, 0 = male), interscholastic high school sport participation (1 = yes, 0 = no), noninterscholastic high school sport participation (1 = yes, 0 = no), high school extracurricular participation (1 = yes, 0 = no), and self-reported high school grade point average (0.00-4.00). The Behavioral-Emotional-Cognitive School Engagement Scale (BEC-SES) Behavioral subscale score is the average of Items 1-5 (range 0-3), the BEC-SES Emotional subscale score is the average of Items 6-10 (range 0-3), the BEC-SES Cognitive subscale score is the average of Items 11-15 (range 0-3), and the BEC-SES Total score is the average of all 15 Items (range 0-3). A higher number indicated a higher school engagement score. Descriptive statistics are provided in Tables 3 and 4.

Hypotheses

Hypothesis 1. This study hypothesized that college students who participated in organized high school sports (e.g. junior varsity, varsity) were expected to report better academic achievement in high school compared to the reported academic achievement of college students who participated in community-based sports not sanctioned by the high school and college students who did not participate in organized high school sports. A 3 x 2 ANOVA was used to evaluate Hypothesis 1. The study found no statistically significant difference ($p = .57$; $F(2) = .57$) among the GPA of college students who participated in organized high school sports ($M = 3.47$; $SD = .36$), community-based high school sports ($M = 3.61$; $SD = .24$), or no sports participation ($M = 3.56$; $SD = .43$).

Table 3

Participant Descriptive Statistics

Characteristic	<i>n</i>	%
Gender		
Male	58	38.7
Female	92	61.3
Athletic participation		
No participation	31	20.7
High school participation	108	72.0
Community-based participation	11	7.3
All levels of participation (high school sports, community-based sports, and extracurricular participation)		
No	104	69.3
Yes	46	30.7
Extracurricular participation		
No	8	5.3
Yes	142	94.7

Table 4

BEC-SES Statistics

Characteristic	<i>n</i>	<i>M</i>	<i>SD</i>
GPA	150	3.50	.37
BEC-SES Behavioral	150	2.28	.48
BEC-SES Emotional	150	2.05	.66
BEC-SES Cognitive	150	2.05	.60
BEC-SES Total	150	2.13	.47

However, it should be noted that the Levene's test of equality of error variances was significant ($p = .03$; $F(5, 144) = 2.61$). I also examined gender effects for GPA when comparing college student's participation in high school sports, community sports, or no participation in sports. Females ($M = 3.59$; $SD = .35$) had a statistically significantly higher high school GPA than males ($M = 3.36$; $SD = .37$; $p = .01$; $F(1) = 8.06$). There was no significant interaction effect between gender and type of athletic participation ($p = .39$; $F(2) = .95$)

Hypothesis 2. This study hypothesized that college students who participated in all levels of high school extracurricular activities (e.g., high school sports, extracurricular activities, and sports not sanctioned by the high school) were expected to have the highest academic achievement compared to all other groups. A 2 x 2 ANOVA was used to evaluate Hypothesis 2. The study found no statistically significant difference ($p = .84$; $F(1) = .04$) between the GPA of college students who participated in all levels of extracurricular activities in high school ($M = 3.53$; $SD = .36$) versus college students who participated in one level, two levels, or no extracurricular activities in high school ($M = 3.49$; $SD = .38$). When examining the gender differences for students who participated in all levels versus students who did not, females ($M = 3.59$; $SD = .35$) had a statistically significantly higher high school GPA than males ($M = 3.36$; $SD = .37$; $p = .001$; $F(1) = 11.61$). There was no significant interaction effect between gender and level of participation ($p = .86$; $F(1) = .03$).

Hypothesis 3. This study hypothesized that college students who participated in organized high school sports (e.g., junior varsity, varsity) were expected to report more

school engagement in high school compared to college students who participated in community-based sports not sanctioned by the high school and college students who did not participate in organized high school sports. I used four separate 3 x 2 ANOVAs to evaluate Hypothesis 3. The study found no statistically significant difference ($p = .09$; $F(2) = 2.49$) among the Total School Engagement scores of college students who participated in organized high school sports ($M = 2.17$; $SD = .45$), community-based high school sports ($M = 2.06$; $SD = .43$), or no sports participation ($M = 2.03$; $SD = .53$).

I also examined each subscale of the BEC-SES (e.g., Behavioral, Emotional, and Cognitive). When comparing this group using a 3 x 2 ANOVA, students who participated in high school sports had statistically significantly higher Emotional School Engagement ($M = 2.16$; $SD = .63$) compared to students who participated in community-based sports ($M = 1.69$; $SD = .66$; $p = .02$; $F(2) = 6.47$) and when compared to students who did not participate in any sports ($M = 1.80$; $SD = .64$; $p = .01$; $F(2) = 6.47$). Another 3 x 2 ANOVA found no statistically significant differences among these groups when measuring Behavioral School Engagement ($p = .98$; $F(2) = .02$). However, it should be noted that the Levene's test of equality of error variances was significant ($p = .02$; $F(5, 144) = 2.71$). Also, there were no statistically significant differences among these groups when measuring Cognitive School Engagement ($p = .46$; $F(2) = .78$) with a final 3 x 2 ANOVA.

Finally, I examined gender effects on school engagement for the Total School Engagement score and all of the subscales. Females ($M = 2.22$; $SD = .43$) had a statistically significantly higher BEC-SES Total School Engagement score compared to males ($M = 1.98$; $SD = .48$; $p < .001$; $F(1) = 10.43$), females ($M = 2.39$; $SD = .46$) had a

statistically significantly higher Behavioral School Engagement score compared to males ($M = 2.12$; $SD = .48$; $p = .01$; $F(1) = 8.32$), and females ($M = 2.19$; $SD = .57$) had a statistically significantly higher Cognitive School Engagement score compared to males ($M = 1.83$; $SD = .58$; $p < .001$; $F(1) = 12.37$). When comparing this same group, females ($M = 2.10$; $SD = .61$) and males did not differ significantly ($M = 1.98$; $SD = .72$; $p = .13$; $F(1) = 2.31$) on Emotional School Engagement scores. There were no significant interaction effects between gender and the Total School Engagement score or any of the subscales: Total School Engagement score ($p = .07$; $F(2) = 2.72$). Behavioral School Engagement ($p = .18$; $F(2) = 1.71$), Emotional School Engagement ($p = .20$; $F(2) = 1.62$), and Cognitive School Engagement ($p = .13$; $F(2) = 2.01$).

Hypothesis 4. This study hypothesized that college students who participated in all levels of high school extracurricular activities (e.g., high school sports, extracurricular activities, and sports not sanctioned by the high school) were expected to have the highest school engagement compared to all other groups. A 2 x 2 ANOVA was used to evaluate Hypothesis 4. The study found no statistically significant difference ($p = .74$; $F(1) = .11$) between the Total School Engagement scores of college students who participated in all levels of extracurricular activities in high school ($M = 2.18$; $SD = .53$) versus college students who participated in one level, two levels, or no extracurricular activities in high school ($M = 2.11$; $SD = .43$). When examining each subscale of the BEC-SES, no statistically significant differences were found between students who participated in all levels versus students who did not: Behavioral School Engagement ($p = .32$; $F(1) = 1.02$); Emotional School Engagement ($p = .17$; $F(1) = 1.94$); and Cognitive School Engagement ($p = .96$; $F(1) = .00$).

When examining the gender differences for students who participated in all levels versus students who did not, females ($M = 2.22$; $SD = .43$) had a statistically significantly higher BEC-SES Total School Engagement score compared to males ($M = 1.98$; $SD = .48$; $p < .001$; $F(1) = 8.73$), females ($M = 2.39$; $SD = .46$) had a statistically significantly higher Behavioral School Engagement score compared to males ($M = 2.12$; $SD = .48$; $p < .001$; $F(1) = 11.35$), and females ($M = 2.19$; $SD = .57$) had a statistically significantly higher Cognitive School Engagement score compared to males ($M = 1.83$; $SD = .58$; $p < .001$; $F(1) = 10.31$). When comparing this same group, females ($M = 2.10$; $SD = .61$) and males did not differ significantly ($M = 1.98$; $SD = .72$; $p = .35$; $F(1) = .90$) on Emotional School Engagement scores. There were no significant interaction effects between gender and the Total School Engagement score or any of the subscales: Total School Engagement score ($p = .69$; $F(1) = .16$). Behavioral School Engagement ($p = .56$; $F(1) = .34$), Emotional School Engagement ($p = .66$; $F(1) = .20$), and Cognitive School Engagement ($p = .96$; $F(1) = .00$).

Hypothesis 5. This study hypothesized that there would be a statistically significant difference in high school academic achievement between college students who participated in any high school extracurricular activity (e.g. sports, band, school clubs, student government) and college students who did not participate in any high school extracurricular activity. A 2 x 2 ANOVA was used to evaluate Hypothesis 5. The study found no statistically significant difference ($p = .66$; $F(1) = .19$) between the GPA of college students who participated in any extracurricular activities in high school ($M = 3.50$; $SD = .36$) versus college students who participated in no extracurricular activities in high school ($M = 3.44$; $SD = .59$). When examining the gender differences in this group,

females ($M = 3.59$; $SD = .35$) had a statistically significantly higher high school GPA than males ($M = 3.36$; $SD = .37$; $p < .001$; $F(1) = 14.26$). There was also a significant interaction effect between gender and extracurricular activity participation ($p = .03$; $F(1) = 4.98$).

Hypothesis 6. This study hypothesized that there would be a statistically significant difference in school engagement in high school between college students who participated in any high school extracurricular activity (e.g., sports, band, school clubs, student government) and college students who did not participate in any high school extracurricular activity. A 2 x 2 ANOVA was used to evaluate Hypothesis 6. The study found no statistically significant difference ($p = .22$; $F(1) = 1.54$) between the Total School Engagement scores of college students who participated in any extracurricular activities in high school ($M = 2.14$; $SD = .46$) versus college students who participated in no extracurricular activities in high school ($M = 1.88$; $SD = .61$). When examining the gender differences in this group, females and males did not differ significantly ($p = .26$, $F(1) = 1.28$; $p = .05$, $F(1) = 3.76$; $p = .92$, $F(1) = .01$; $p = .22$, $F(1) = 1.54$, respectively) for BEC-SES Total School Engagement score (female $M = 2.22$, $SD = .43$; male $M = 1.98$, $SD = .48$), BEC-SES Behavioral School Engagement score (female $M = 2.39$, $SD = .46$; male $M = 2.12$, $SD = .48$), BEC-SES Emotional School Engagement score (female $M = 2.10$, $SD = .61$; male $M = 1.98$, $SD = .72$), and BEC-SES Cognitive School Engagement score (female $M = 2.19$, $SD = .57$; male $M = 1.83$, $SD = .58$). There were no significant interaction effects between gender and the Total School Engagement score or any of the subscales: Total School Engagement score ($p = .80$; $F(1) = .07$). Behavioral

School Engagement ($p = .63$; $F(1) = .24$), Emotional School Engagement ($p = .59$; $F(1) = .30$), and Cognitive School Engagement ($p = .71$; $F(1) = .14$).

CHAPTER IV

DISCUSSION

The purpose of the current study was to examine how high school sport participation related to high school grade point averages. I expected to find that students who participated in high school sports would have higher school engagement, and, therefore, better academic outcomes (e.g., higher high school GPA). I also investigated the relationships between reported participation in high school sports as well as participation in nonsport extracurricular activities and with academic achievement and school engagement. Finally, I investigated the unique relationship of high school sponsored sports participation compared to intermural sports participation related to GPA and school engagement. I expected to find that students who participated in high school sports would have higher GPA and school engagement than students who participated in intermural sports. I also wanted to explore gender differences for GPA and school engagement.

This study did not find data to support any of the original six hypotheses. It is difficult to interpret negative results for many reasons. The instruments used may be suspect and might not have measured the constructs they were intended to measure. Also, participants may have been unmotivated to accurately complete the questionnaire. For example, several of the respondents used the same number for every question of the BEC-SES questionnaire. However, positive results were found when examining supplementary analyses such as examining gender differences and examining each subscale of the BEC-SES.

The lack of support could be due to a variety of reasons. One possible reason is the restricted range of the variables (e.g., self-reported GPA, percentage of students who participated in sports, and school engagement scores). There were 108 students that participated in organized high school sports, but there were only 11 students that participated in outside high school sports and 31 students that did not participate in any sports. This made comparisons based on participation in sports difficult. The high percentage of sport participants was consistent with Fredricks and Eccles (2006) who found that students who participated in high school sports in 11th grade had completed more schooling one year after high school than students who did not participate in high school sports. Also, Troutman and Dufur (2007) found that girls who participated in high school sports were more likely to have completed college and earned a bachelor's degree six years after graduating from high school than girls who did not participate in high school sports. Because students have to have a strong GPA to get into a competitive college like Middle Tennessee State University, the GPA data may be positively skewed compared to GPA data in a high school where not everyone has good enough grades to get into college.

Another possibility for why this study's hypotheses were not supported can be explained by previous data mentioned in the literature review. Rees and Sabia (2010) did not find a significant difference between the GPAs of students who participated in sports and students who did not participate in sports. They explained this finding by considering individual variables such as motivation, future-orientedness, and self-discipline. The GPA difference the authors found could be mediated by those individual fixed effects. Because the current study consisted of only college students, it is possible

that my sample contained students with higher motivation, future-orientedness, and self-discipline. This is unlike the sample from Rees and Sabia, whose sample consisted of high school students who may or may not have gone to college.

Even though there were no data to support the study's original six hypotheses, through supplementary analyses, significant results were found for other constructs. When comparing college students who participated in high school sports, community-based sports, or no sports participation, students who participated in high school sports had statistically significantly higher Emotional School Engagement compared to students who participated in community-based sports and compared to students who did not participate in any sports. According to Fredricks et al. (2004), emotional engagement refers to students' reactions and attitudes toward their teachers, classmates, school environment, and academics. Emotional engagement is considered important for students to create ties to their school, and it may influence students' motivation to do their work. Camiré and Trudel (2013) reported that playing football in high school helps boys develop a connectedness to their high school, remain academically engaged in high school, and learn important life skills. Playing high school football also gave athletes a sense of belonging to their team. Similarly, DeMeulenaere (2010) concluded that participants in his study were motivated to succeed in school and keep a certain GPA, in part, because they wanted to participate in school sports. Finally, Stokvis (2009) reported that many student athletes in the United States were motivated to do well in school so they could continue playing school sports. Based on the conclusions of the studies mentioned above, I believe it makes sense that this study found that students who played high school sports had higher Emotional School Engagement scores than students who

played outside sports or no sports. Students who played high school sports may have been more motivated to do well, and high school sport participation may help students create strong ties to their school.

A second supplementary finding was that females had higher GPAs than males in all comparisons. These findings are consistent with Broh's (2002) study where he found that females had higher math grades, English grades, math test scores, and reading test scores than males. In Connell et al. (1994), boys had significantly higher negative educational outcomes than girls in all three samples (New York, Atlanta, New York/Baltimore/Washington DC), and girls had significantly higher positive educational outcomes than boys in two of the three samples (Atlanta, New York/Baltimore/Washington DC). These results are all consistent with my study's results that females had statistically higher GPAs than males.

Finally, females had statistically significantly higher BEC-SES Total, Behavioral, and Cognitive School Engagement scores than males in two comparisons. Scores were higher when comparing participation in high school sports, community sports, or no participation in sports. Also, scores were higher when comparing participation in all levels of extracurricular activities in high school (e.g., high school sports, extracurricular activities, and sports not sanctioned by the high school) versus participation in one level, two levels, or no participation in high school. Forneris et al. (2015) found that females scored significantly higher than males on the Commitment to Learning scale, which is a scale similar to the Cognitive School Engagement subscale of the BEC-SES. Also, in Li (2010), 10th- and 11th-grade girls had higher Behavioral, Emotional, and Cognitive

School Engagement scores than males on the BEC-SES. Therefore, this is not the first time that females scored higher than males on the BEC-SES.

Conclusions

Although my findings were generally insignificant, and although insignificant findings are difficult to interpret, I did find several interesting results. Students who participated in high school sports had statistically significantly higher Emotional School Engagement compared to students who participated in community-based sports and compared to students who did not participate in any sports. This may mean that high school athletes feel more connected to their school than students who did not play sports for their high school. A second finding was that females had higher GPAs than males in all comparisons. Finally, females had statistically significantly higher BEC-SES Total, Behavioral, and Cognitive School Engagement scores than males.

Limitations

This study had several important limitations. This was a retrospective study, so all participants were enrolled in college. This means that my sample was not representative of the entire population of their age group in the Southeastern United States. Furthermore, there were only 150 participants. A higher sample number would have increased the study's reliability and validity. Another limitation is that participants may have been unmotivated to accurately complete the questionnaire. For example, several of the respondents used the same number for every response to the BEC-SES questionnaire. Also, out of the 150 participants, 108 participated in organized high school sports, but only 11 participated in outside high school sports and only 31 did not participate in any sports. This made comparisons based on participation in sports

questionable. Finally, because of my numerous insignificant findings, it is difficult to draw conclusions. For example, the instruments used may be suspect and might not have measured the constructs they were intended to measure. Also, participants may have not answered carefully, or perhaps there is no meaningful link between these constructs.

In the future, it would be helpful to measure these hypotheses by using high school students, and by having a larger sample size. This would help ensure that the sample is more representative of the actual population instead of having a restricted range of participants by using only college students from one university. By only using college students, the GPA and school engagement scores may be inflated compared to sampling high school students because some high school students might not have a high enough GPA to get into college, or they might not have enough school engagement to want to pursue a college degree. Also, I did not control for any outside variables that could affect GPA and school engagement (e.g., SES, gender, motivation to succeed). Future research may want to control for these extraneous variables in order to better look at the correlations between sport and extracurricular participation and GPA and school engagement.

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APPENDICES

APPENDIX A**Sports Participation Checklist**

Baseball
Basketball
Bowling
Cheerleading
Cross country
Dance
Football
Golf

Soccer
Softball
Tennis
Track
Volleyball
Wrestling
Other: _____

APPENDIX B

Extracurricular Activity Participation Checklist

Art Club	Math Club	Speech and Debate
Band	Model United Nations	Sports teams
Chemistry Club	Newspaper	STAR Teens
FCA (Fellowship of Christian Athletes)	Pep Club	STEM Club (Science, Technology, Engineering, and Math)
FCCLA (Family, Career, and Community Leaders of America)	Photography Club	Student Council
FFA (Future Farmers of America)	Prom Committee	Student Government
Film Club	Science Club	Yearbook Club
French Club	Skills USA	Other: _____
HOSA (Health Occupation Students of America)	Spanish Club	

APPENDIX C**GPA Checklist**

Mostly below Ds = 0.5

Mostly Ds = 1.0

Mostly Cs and Ds = 1.5

Mostly Cs = 2.0

Mostly Bs and Cs = 2.5

Mostly Bs = 3.0

Mostly As and Bs = 3.5

Mostly As = 4.0

APPENDIX D

BEC-SES Approval



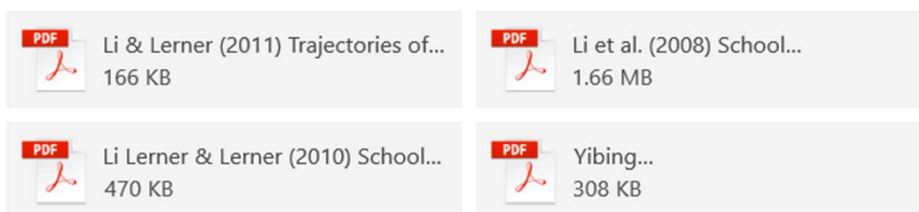
kristinal.schmid@gmail.com on behalf of Kristina Schmid Callina
7/11/2016 1:38 PM



Re: FW: 15 Item School Engagement Scale

To: Miranda Beard; ettya fremont; Lerner, Richard M.

[Save all attachments](#)



Dear Miranda,

I'm writing on behalf of Dr. Lerner. Yes, you do have our permission to use the school engagement measure from the 4-H Study of Positive Youth Development. . I have attached some more information about the measure, as well. Please let us know if you have any questions.

The attached document scale (**Yibing Li.SchoolEngagementScale.pdf**) contains the school engagement items, scoring information, reliability estimates from the 4-H Study of Positive Youth Development, and a description of the process that was used for developing the items. I also attached a few articles by Dr. Li that you may find useful.

We do ask that you send us a summary and a copy of any papers or publications that result from the use of the school engagement measure. Please do not hesitate to contact us at any time with any questions or concerns that you have about using the measure.

Best,
Kristina Callina

APPENDIX E**IRB Approval****IRB****INSTITUTIONAL REVIEW BOARD**

Office of Research Compliance,

010A Sam Ingram Building,

2269 Middle Tennessee Blvd

Murfreesboro, TN 37129

**IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE**

Sunday, October 23, 2016

Investigator(s): Miranda Beard (PI) and Dr. James Rust (FA)

Investigator(s)' Email(s): mlb2af@mtmail.mtsu.edu

Department: Psychology

Study Title: High School Athletic and Extracurricular Participation Related to Academic Achievement and School Engagement

Protocol ID: **17-2050**

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the **EXPEDITED** mechanism under 45 CFR 46.110 and 21 CFR 56.110 within the category (7) *Research on individual or group characteristics or behavior*. A summary of the IRB action and other particulars in regard to this protocol application is tabulated as shown below:

IRB Action	APPROVED for one year from the date of this notification
Date of expiration	10/31/2017

Participant Size	500	
Participant Pool	MTSU Psychology Research Pool.	
Exceptions	N/A	
Restrictions	N/A	
Comments	N/A	
Amendments	Date N/A	Post-approval Amendments None

This protocol can be continued for up to THREE years (**10/31/2019**) by obtaining a continuation approval prior to **10/31/2017**. Refer to the following schedule to plan your annual project reports and be aware that you may not receive a separate reminder to complete your continuing reviews. Failure in obtaining an approval for continuation will automatically result in cancellation of this protocol. Moreover, the completion of this study MUST be notified to the Office of Compliance by filing a final report in order to close-out the protocol.

Continuing Review Schedule:

Reporting Period	Requisition Deadline	IRB Comments
First year report	10/31/2017	INCOMPLETE
Second year report	10/31/2018	INCOMPLETE
Final report	10/31/2019	INCOMPLETE

IRBN001 Version 1.3
Office of Compliance

Revision Date 03.06.2016 Institutional Review Board
Middle Tennessee State University

The investigator(s) indicated in this notification should read and abide by all of the post-approval conditions imposed with this approval. [Refer to the post-approval guidelines posted in the MTSU IRB's website](#). Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident. Amendments to this protocol must be approved by the IRB. Inclusion of new researchers must also be approved by the Office of Compliance before they begin to work on the project.

All of the research-related records, which include signed consent forms, investigator information and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the secure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board

Middle Tennessee State University

Quick Links:

[Click here](#) for a detailed list of the post-approval responsibilities.

More information on expedited procedures can be found [here](#).