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High School Student Athletes and Nonathletes' Disciplinary Referrals and Grade Point Averages

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Jack Calhoun

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Walden University
2014

Abstract

High School Student Athletes and Nonathletes'
Disciplinary Referrals and Grade Point Averages

by

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MEd, Georgia Southwestern State University, 1998

BS, Georgia Southwestern State University, 1997

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University

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Abstract

This quantitative study investigated how athletic participation in public high schools influenced students' academic achievement and positive social behavior. Disciplinary referrals are on the rise in American schools and are a cause of concern for teachers, administrators, parents, and community members. School personnel currently implement programs designed to curb discipline problems in the classroom and foster productive behavior among adolescents. There is some debate and conflicting literature on whether sports participation has a beneficial influence on students. The writings of Virginia Chomitz, who hypothesized a positive relationship between academic achievement and physical fitness, guided this research. This study analyzed grade point average (GPA) and discipline referral data for 4,433 students in a suburban American high school over a 3-year time period. The GPA and referral data for athletes and nonathletes were compared using multiple *t* tests, and it was found that athletes had significantly higher GPAs and lower discipline referrals when compared to nonathletes. These results, which match the original hypotheses, provide greater insight into how participating in athletics may improve a student's behavior and academic achievement. With this knowledge, educators may place greater emphasis on athletics as a method to promote achievement and positive experiences among high school students. These positive effects will contribute to social change for students at an individual level and for entire school environments.

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Section 1: The Problem

Introduction

Student discipline, behavior, and violence have increasingly become a cause of concern in United States public schools over the past several decades. Discipline referrals and school suspensions have doubled throughout the U.S., and the frequency of in-school violence has reached unprecedented and alarming levels (Bianco, Dinkles, Kemp, Kena, & KewalRamani, 2009). Even in schools where violence is not statistically on the rise, the mass publicity of isolated incidents of campus brutality has fed into the perception that today's students are more aggressive (Fowler, 2011). According to Fowler (2011), these perceptions have made schools more punitive with increased policing and “zero tolerance” discipline. This has resulted in more students receiving discipline referrals than ever before.

However, instead of reducing negative behaviors, there is evidence that the rise in referrals only perpetuates the problem because students begin to think of themselves as delinquents (Shah, 2013). This identity puts them at increased risk for further antisocial activity, dropout, and even prison. Even poor classroom behavior that does not pose a safety risk to students or educators still has a negative effect on the learning environment, since it distracts all students in the classroom, and forces teachers to focus more on classroom management than on delivering lessons. Discipline problems account for a considerable share of lost time in the classroom setting and, as a result, negatively impact academic achievement and student grade point averages (GPAs) (Bear, Doyle, Osher, & Sprague, 2010).

For many educators, devising strategies to curb such discipline issues and, in turn, heighten academic success is a leading priority. Participation in extracurricular activities is seen as one strategy in improving student success, since studies have shown that it results in lower dropout rates and an increased likelihood of college attendance among at-risk students (Eccles, Peck, Roeser, & Zarrett, 2008). Similarly, other research has shown that for students to reach their highest academic and behavioral potential they need productive, socially acceptable activities that alleviate stress and promote relaxation (Bear et al., 2010). These studies suggest that encouraging students to take part in extracurricular activities and supporting their efforts may be one key in remedying discipline issues and promoting academic success. However, another study found that not all extracurricular activities bring about positive behaviors, as there is a direct association between vigorous physical activity and increased delinquency among male adolescents (Adlaf et al., 2007). In fact, this study concluded that "physical activity is not the solution for reducing juvenile delinquency" (Adlaf et al., 2007, p. 155). The Adlaf study is of particular interest, because it suggests that, unlike most extracurricular activities, certain types of athletics may have a negative influence on adolescents.

Several other studies have found contradictory results, however. These studies found a direct positive relationship between students' academic achievement and physical fitness (Ayers, 2010; Castelli, Centeio, Hillman, 2012; Chomitz et al., 2009; Cottrel, Clark, & Fedewa, 2010; Northrup, & Witteberg, 2009). Thus, although it seems adolescents are positively influenced by extracurricular activities as a whole, the contradictory results detailed in these various studies show there is disagreement in how

athletics, specifically, influence behavior and student achievement. The conflicting findings on how athletics shape adolescent behavior and achievement were a significant catalyst for the creation of this study.

The goal of this study was to examine academic achievement and disciplinary action in specific relation to school-based athletics. It did not examine other extracurricular activities, unlike many prior studies, since the focus was to determine if participation in school sports had a positive or negative influence on the students' school behavior and academic achievement. I also desire to enact social change by sharing the findings and suggested policy recommendations, as detailed in Appendix A, with district officials and fellow educators. They can use the knowledge that athletic participation did have positive effects on one student population and apply those findings and policy recommendations to their own schools to potentially increase student achievement and lower behavioral problems.

To arrive at the conclusion that athletic participation improved student behavior and achievement, I evaluated discipline referrals, grade point averages, and athletic participation data from a selected public high school in a suburban area of South Carolina for a three-year time period. The school's athletic director maintained a list of names for all sports participants, and I used those data to designate all students in the school as either athletes or nonathletes. Then I compared the data between the two groups to gauge whether athletes, as a group, had better discipline and higher GPAs than nonathletes. The remaining sections of this study provide further evidence of disciplinary problems in

schools, a discussion of relevant research, descriptions of the methodology, and a detailed analysis of the findings.

Definition of the Problem

The motivation for this research arose from perpetual discipline issues observed at the high school used in this study. Although this high school, hereafter referred to as ABC High School, has not had a statistically significant increase in discipline referrals over the past several years, it has not experienced an improvement either and devotes around 2,000 hours of educational time per year on behavioral matters. According to the school's annual report on discipline referrals, ABC High School had an average of two discipline referrals per student per year. Because the school has an average enrollment of 1,451 students, those referrals equate to a significant amount of class time spent on misbehavior and non-educational activities. Other research shows this is not merely an isolated problem at ABC High School but is an issue facing schools throughout the nation (Bear, Doyle, Osher, & Sprague, 2010; Bianco et al., 2009). Perpetual or increasing discipline referrals and suspension rates at ABC High School and at schools across the nation create another problem: A loss of academic learning for all students directly and indirectly involved.

These discipline problems are of particular concern, because appropriate behavior in schools is necessary for effective learning to occur (Bear et al., 2010). Students need to act appropriately and refrain from distracting behaviors regardless of their learning pace. Those who are merely in the classroom and not causing distractions suffer loss of instructional time as teachers put their lessons on hold to correct misbehaving students or

to complete appropriate referral documentation for administration. Additionally, students who are the source of classroom distractions are, by way of their actions, missing instructional opportunities at the time of their misbehavior. They also miss additional learning if their punishment includes in-school or out-of-school suspension, as they are prohibited from attending their regular classes. Consequently, chronic misbehavior and its associated loss of educational-focused time has great potential to reduce academic achievement and standardized test scores for all students in an entire school. Finding strategies to reduce the problem of poor conduct and its associated detriment to academic success is the inspiration for this study.

Poor conduct, however, does not only negatively affect students, since students are a reflection of their parents, teachers, coaches, and leaders. Their personal and scholastic development has an influence on the community as a whole, because it partially determines whether they will become positive, contributing members of society. Schools that regularly graduate upstanding individuals become a source of pride and value for the community, which can create a standard of excellence (Barnes, Farrell, Melnik, Miller, & Sabo, 2007). In contrast, in schools where discipline is a chronic problem and academics suffer, these traits and negative feelings can disseminate into the community and perpetuate the problem. Consequently, improving student behavior and the schools in general should be of concern to everyone in the community. All educators and community members have a stake in devising new and better ways to cultivate positive student conduct. The purpose of this study is to gain greater insight into whether

school athletics, in particular, are an outlet for fostering the beneficial behaviors that will benefit schools and communities as a whole.

Rationale

Evidence of the Problem at the Local Level

As mentioned, ABC High School averages nearly two discipline referrals per student and has an average enrollment of 1,443 students. These data, represented in the table below, were gathered from a three-year time span and provided directly from the school's office workers and counselors.

Table 1

Enrollment and Referral Numbers for ABC High School

Variable	2009-2010	2010-2011	2011-2012	Yearly Average
Enrollment	1,440	1,452	1,541	1,478
Referrals	2,831	2,735	1,872	2,479
Average Referrals per Student	1.97	1.88	1.2	1.68

The number of referrals listed in the table, as found in the school's annual report on discipline referrals, indicates that students at ABC High School average one to two discipline referrals per year. That figure, combined with enrollment, means the school is losing a significant amount of educational time on discipline issues. For instance, a typical school referral requires teachers to fill out proper documentation, often in the middle of class, and to send offending students to administration to discuss their behavior. Students may also spend time in detention or suspension as consequence of their behaviors. Based on surveys conducted at schools across the nation, behavior issues and the requisite discipline responses are a significant cause of frustration in many schools, as they can monopolize hours of time for students, teachers, and administrators alike (Negron, Simonsen, & Sugai, 2008). Researchers who conducted these surveys found that schools that eliminate large numbers of office discipline referrals can recoup 15¾ days of administrative time and students can save 79½ days of instructional time. Furthermore, professional educators from the University of Louisville and Loyola

University estimate that an average discipline referral monopolizes 40 to 45 minutes of educational time (Anderson, 2012). Based on that estimation and ABC High School's 2,479 average yearly referrals, it is probable that ABC High School loses up to 1,859 hours of educational time per year because of discipline problems, which is more than a single student spends in school during an entire year. If administrators and educators could reduce the number of hours spent on discipline, they could instead use that time for more constructive pursuits, such promoting learning of curriculum. Considering the amount of productive time that could be recovered, it is in the best interest of all educators to curb discipline issues.

Evidence of the Problem from the Professional Literature

As detailed in *The Educational Researcher Journal*, many schools in the nation are placing more emphasis on eliminating negative behaviors in the classroom (Bear et al., 2010). This trend shows that perpetual discipline problems at ABC High School are not unusual but typical throughout the US. These negative behaviors encompass a range of actions but commonly include horseplay, disruptiveness, defiance, class cutting, bullying, drug abuse, refusal to follow instructions, swearing, sexual harassments, vandalism, and fighting. Data from the National Center for Education Statistics show that school suspension rates have more than doubled since 1974, and in 2006, 3.3 million students received out-of-school suspension on at least one occurrence while 102,000 were expelled (Bianco et al., 2009). These misbehaviors not only impact the offending student, but can have a negative effect on other students, the school, and on the community as a whole. As such, solving the problem of increasing discipline issues

should be a concern for all people living within an area (Barnes, Farell, Melnik, Miller, & Sabo, 2007). For these reasons, improving student behavior in public schools is an issue relevant to all of society.

Conventional wisdom argues that sports help improve classroom behavior because students learn important life lessons, such as self-control, team work, and respect. Athletics have the ability to provide a venue for social adjustment, build character and psychological well-being, promote a sense of belonging and usefulness, and facilitate one to high values of citizenship (Brooks & Theoharis, 2012). Researchers posit that emotional health can, in part, come from "school bonding" that occurs when students stay involved with school peers and adults, through sports or other activities, as they feel a greater sense of belonging and a desire to be a positive member of the group (Cristini, Dallago, Nation, Santinello, & Scacchi, 2012). Moreover, other studies state that physical activity, such as participating in organized sports, can produce positive intellectual and academic benefits that last a lifetime (Rosewater, 2009). The overall data from these various studies support the common notion that sports participation provides adolescents with a variety of benefits beyond fitness.

An additional reason why some athletes are motivated to perform well scholastically and behaviorally is because of the requirements for sports participation. Athletes must maintain a minimum grade point average, which differs from state to state, to be eligible for participation as well as maintain certain standards of conduct (Ayers, 2010). The practice of requiring athletes to maintain a minimum grade point average gives educators the ability to use sports as a form of motivation to encourage positive

behaviors and academic achievement. Not only does this motivate some athletes to perform better academically and behaviorally, but it also persuades some students who are at risk of dropping out to remain in school (Barnes et al., 2007). However, despite the research showing the many positives that athletics provide to students, such as giving them a sense of belonging and motivating them to maintain high scholastic standards, there is conflicting research that shows not all types of athletics provide these benefits.

Some of the most relevant studies that contradict the benefits mentioned above describe how vigorous physical activity can increase delinquency among adolescents (Adlaf et al., 2007; Barnes et al., 2007). These divergent conclusions about the effects of sports participation necessitate further investigation to help identify and elucidate the relationships between high school athletics, grade point averages, and student referrals. A clearer understanding of these relationships is important since athletics are a major aspect of adolescent experiences in high school. At the same time, a better understanding may be revealed regarding the promotion of pro-social behavior in high school because of athletic participation.

Definitions

Athlete. A student who participates in school sports at any interscholastic level.

Nonathlete. A student who does not participate in school sports at any interscholastic level.

Discipline referrals. Disciplinary actions that are reported and on file with the high school's office and administration.

Significance

This study offers educators insight into the benefits that school athletics had on student behavior and academic achievement at ABC High School, by assessing its influence on disciplinary referrals and GPAs. This knowledge serves as a launching point for future research, which educators can use to determine if they should use sports as a way to increase academic achievement and positive behavior in their own schools. Clearly knowing how athletics help shape adolescent behavior provides educators with knowledge, which can assist them in reevaluating the emphasis their schools place on sports. In particular, they might evaluate how they encourage social networks and mentalities within those programs and if they should promote athletics to facilitate positive classroom behavior and academic success. While this study does not answer those questions directly for every school, it contributes to the knowledge found in related research, which, as a whole, can help teachers and administrators form evidence-based decisions concerning athletics.

Guiding/Research Question

Does participation in high school athletics make a significant difference on student discipline referrals and grade point averages as compared to students who do not participate?

The increased discipline problems occurring at both the local and national levels create a domino effect of unfortunate consequences, as it results in loss of instructional time, which can then affect GPAs and scholastic performance. Research by Procedia Social and Behavioral Sciences noted a direct correlation between a student's level of

discipline problems and his or her academic achievement, with those having the greatest behavior issues generally performing the worst academically (Malinauskiene, Vosylis, & Zukauskiene, 2011). Similarly, another determined that "the strongest predictor of academic achievement was students' academic behavior" (Cirila, Jana, Sonja, & Milena, 2009, p. 55). To allow the increasing trend of poor behavior to continue would be a detriment to the entire educational system, yet current disciplinary tactics are, in many cases, proving ineffective (Skiba, & Peterson, 2000). This suggests that many students do not respond well to extrinsic punishments, such as detentions, notes home, referrals, and other traditional remediation tactics. If intervention strategies remain inadequate, discipline problems will likely continue to rise while academics suffer.

Researchers have (Ayers, 2010; Castelli, Centeio, Hillman, 2012; Chomitz et al., 2009; Clark, & Fedewa, 2010; Cottrel, Northrup, & Witteberg, 2009) explored the strong connection between extracurricular activity participation and the positive influence it has on social and academic achievement. These studies showed that extracurricular activities can provide a much needed source of intrinsic motivation for students by providing a social support system, a sense of belonging, and the desire to do well in school, so they can continue to participate in enjoyable programs. While a student's participation in other activities other than sports had no bearing on this study, it might seem that because sports are in the category of an "extracurricular activity" they would provide the same social and academic benefits as other disciplined activities. However, this is not necessarily the case as there is discrepant information regarding the scholastic advantages of athletic participation.

For example, while some, such as Mahoney (2000), determined that the physical, psychological, and interpersonal demands placed on student athletes assist them in making better decisions and being more successful in school and throughout the duration of their lives, there is also compelling evidence to the contrary, which shows sports can have a negative effect on discipline and academic achievement. Therefore, the question remains: Do student athletes experience more or less discipline problems and have higher or lower grade point averages than nonathletes? This question served as the basis of this study, which adds to similar research done by Barnes et al., (2007) and Adlaf et al., (2007). Because this study focused only on the evaluation between student athletes and nonathletes, those who participated in non-school sponsored sports or in different forms of extracurricular activities were not considered in the study unless they also took part in school-sponsored athletics. Although there is little doubt extracurricular activities in general have a positive influence on students, the goal of this study was to see if school athletics, specifically, had a distinctive impact on behavior.

Review of the Literature

There is considerable literature on school discipline issues, how physical fitness improves learning and the effects of extracurricular activities. However, some of the available information contradicts each other and is in need of further investigation. This section of the study details relevant contributing literature to the topic of student behavior and its association with grades and school sponsored activities.

According to a recent poll, most teachers (55 %) expect their schools to have more disruptive behavior than what was experienced in prior years (Boardman, 2010).

This not only signals a changing pattern in student conduct but also hints at a drop in teacher morale, as teachers anticipate a continual deterioration in learning environments. Furthermore, annual research conducted by the Josephson Institute Center for Youth Ethics (2002; 2010) reflects a pattern of deviant behavior in schools. In their 2002 report they found that 78 % of athletes engaged in cheating, 83 % of students admitted to lying to teachers, and 41 % of boys had engaged in stealing. The 2010 report is equally dismal with half of all high school students polled (43,321) admitting to bullying, one third describing violence as a major problem at schools, and one fourth feeling unsafe at school. Similar trends are reflected in national data, as the National Center for Education Statistics found that school suspension rates have more than doubled since 1974, and in 2006, 3.3 million students received out-of-school suspension on at least one occurrence while 102,000 were expelled (Bianco et al., 2009).

Naturally, understanding the underlying causes of such negative behavior is a common concern among parents, educators, and community members in general. Extracurricular activities are often proposed as a means of improving the situation, since they are seen as a way to keep young people busy, out of trouble, and a way to make positive social connections. As expected, there is countless literature supporting this notion, including the Eccles et al. (2008) study which stated that extracurricular activities promote healthy development and heightened dedication to academics. Although specific types of extracurricular activities were not differentiated, overall, the study determined those who take part in any type of extracurricular activity, whether school sponsored or not, are less likely to drop out of school or face developmental issues and

are more likely to attend college. The results of that study are especially intriguing since the adolescents in the sample were all considered at-risk, which consists of students who are living in poverty, have low parental education, failing grades, are socially isolated, and in similar difficult situations. It may seem that those hindrances would overshadow any benefits received by extracurricular endeavors; however, participation in such activities proved powerful enough to influence positive behaviors despite major barriers in the youths' personal lives.

Further supporting the benefits of extracurricular activities and, in particular, athletics is a growing body of evidence (Ayers, 2010; Castelli et al., 2011; Chomitz et al., 2009; Clark et al., 2010; Cottrel et al., 2009; Kronholz, 2012) indicating a significant connection between students' academic achievement and physical fitness. Most of these studies evaluated students' general physical fitness and activity levels, not their participation in school sponsored athletics. Yet they suggest that the connection between physical activity and improved learning will hold true for those who are engaged in any type of fitness regimen, including organized athletics. As a whole, the literature demonstrates that students from elementary to college level who regularly participate in cardiovascular fitness activities have higher than average standardized test scores and GPAs.

Chomitz et al. (2009), who investigated 1,841 students in fourth through eighth grade from a demographically diverse urban school, conducted one of the most notable evaluations relating to fitness and learning. The study's researchers revealed a clear correlation between the number of physical fitness tests a student passed and how well

the individual performed on standardized tests; thus, indicating a relationship between physical fitness and cognitive function. Other, similar work had nearly identical results with a sample of 968 students, as the researchers concluded students deemed in a healthy fitness zone had noticeably higher standardized test scores than their less healthy counterparts (Cottrel et al., 2009). The combined results of these studies denote a significant difference between the academic achievements, as judged by standardized tests, between physically fit students compared to their inactive peers.

Despite the evidence detailed above that students behave better and improve academically when they participate in extracurricular activities, there is other, somewhat contradictory, research that describes a certain "jock identity" pervasive among athletes that negates any inherent benefits associated with other types of extracurricular activities (Barnes et al., 2007). The Barnes study, which sampled 600 Western New York adolescents, found that many athletes, especially those that identify themselves as "jocks," had significantly more incidents of delinquency as compared to other students. Researchers from the study hypothesized that the general adulation society places on athletes may cause some students to believe they can operate above the law without repercussions. Additionally, that same esteem society places on sports causes some students to feel athletics take precedence over all else, including morality and education. Similar research attributed some athletes' antisocial behaviors on a "fear of failure" mentality that spreads outside the sports context into the individual's personal and academic lives (Boardley et al., 2010). Athletes with this fear experience pressure to

perform in all areas, and when they anticipate a lack of success, they may self-sabotage with negative actions, such as avoidance of goals, isolation, or aggressiveness.

Adlaf et al. (2007) conducted one of the longer-term studies addressing the issue. Adlaf et al. (2007) monitored a sample of 3,796 students from the students' first year of high school to graduation and beyond. One of the primary goals of the Adlaf et al. study was to conclude if the long held belief that physical activity reduces delinquency among young people was actually true. The study identified differing theories on the matter, namely those from public health agencies purporting participation in physical activities as a means of crime prevention, and in contrast, several longitudinal studies that determined participation in power sports, such as competitive weight lifting and football, led to an increase in deviant behavior, both violent and nonviolent.

The results of the Adlaf et al. (2007) study confirmed the longitudinal studies, and not the information spread by public health agencies, as it concluded high levels of vigorous activity increased a male adolescent's risk of engaging in delinquent behavior. The researchers theorized the mentality of toughness and confrontation that is promoted and revered in athletics manifests negatively outside the realm of sports, as adolescent boys do not compartmentalize "on field" aggression from their ordinary lives. Additionally, they posited that because actions of violence and drug abuse are so commonly reported among professional athletes those characteristics have become part of the athletic culture. Overall, those findings are in direct contrast with the earlier mentioned research, which found students had mostly positive academic and social effects from athletic participation.

The central points from the literature are that discipline problems are on the rise in schools and are a common source of concern; extracurricular activities can improve positive social development and academics; there is positive relationship between physical activity and cognitive success. However, because there is contrary and varying evidence regarding athletics specifically, it is unclear if school sponsored sports are somehow an exception to the rule (i.e. they do not provide the same benefits offered by general physical fitness and extracurricular activities) because of possible negative influences or mentalities present in the competitive sports environment.

Implications

Based on the research strategies of others and anticipated findings of the data, this study was designed to only compare athletes and nonathletes in regard to their number of discipline referrals and academic success. This reasoning is because there is an apparent discrepancy between the benefits of extracurricular activities in general and other research suggesting participation in sports can lead to delinquent behavior. This study isolated the athletic variable and compared it to the general student population (whether they participated in other activities or not).

The data in this study are organized into tables, charts, figures, and include a written discussion to provide insight into how the results may guide the ways schools and teachers choose to support athletics. Regardless of the study's findings, the information presents cause for future action, such as educators choosing to put greater focus on athletics or deciding to engage in further investigations about the relationship between athletics and student success.

Summary

Current literature indicates disciplinary issues are a common occurrence in today's schools and classrooms. Both teachers and students complain about this growing problem, but the trend continues and, unfortunately, misbehavior not only affects those directly involved but everyone within the school and the community. As a result, grades and academic success suffer.

There is research suggesting participation in extracurricular activities may be one way to combat the problem, since it has been shown to reduce deviant behavior during the school years and beyond (Ayers, 2010; Castelli et al., 2011; Chomitz et al., 2009; Clark et al., 2010; Cottrel et al., 2009; Kronholz, 2012). However, other findings reveal athletics do not produce the same positive behavioral results as other extracurricular activities and, in fact, lead to worse behavior (Adlaf, 2007; Barnes, 2007; Boardly, 2011). Athletics are highly valued in most public schools and, for many, are fundamental to the school experience. Consequently, it is important to learn how sports are influencing behavior and grades, so educators and community members know if they should continue to encourage sports in the same way and possibly create more opportunities or if they should reevaluate the emphasis placed on these programs.

Therefore, the goal of this study was to determine the effects athletics had on discipline referrals and grade point averages. To complete the study, I evaluated all students from a suburban South Carolina high school across a three-year period. For each year, I compared the number of discipline referrals and grade point averages for

both athletes and nonathletes. The specifications and methodology for gathering and analyzing the data are outlined in the next section.

Section 2: The Methodology

Introduction

As described in the review of the above literature, it is posited that participation in school athletics may have an effect on a student's classroom behavior and academic achievement. However, because of conflicting research, whether that effect is positive or negative and to what extent it occurs is not clear. The goal of this study was to evaluate athletic participation, GPA, and discipline referral data at a single school in an effort to better understand the relationship between these three variables.

Section 2 describes the project's design and approach as well as its overall framework. This includes a discussion of why a quantitative method, involving GPA and referral data, was chosen and how it enabled efficiency and lack of bias. Also, the setting and sample of ABC High School are explored, along with an explanation of why this particular sample was chosen and why it was adequate for this study. Furthermore, the processes of how the GPA and referral data were collected and analyzed are addressed as well as the limitations of the study. This section concludes with analysis of the data and an interpretation of whether there was any significant difference between the behavior and academic achievement between athletes and nonathletes.

Project Design and Approach

The research question that prompted this study was: Does participation in high school athletics make a significant difference on student discipline referrals and grade point averages as compared to students who do not participate? This study analyzed school records to determine if students who participated in school sports had more or less

reported discipline referrals and if their GPAs were higher or lower than their nonathletic peers. Determining if there was a direct connection between sports participation and academic or behavioral success made it possible to draw conclusions that may assist educators in finding solutions to the problem of increasing or perpetual discipline problems in school.

This study used a quantitative research design with a causal-comparative approach. Its purpose was to explore the relationship athletics had on student achievement and behavior. To accomplish this, I collected and analyzed school record data from a suburban South Carolina high school across a three-year period between 2009 and 2012. These data included student population numbers as well as recorded referrals and grade point averages for each student. Referrals were chosen as the means for measuring student behavior problems, since students typically only receive written referrals for relatively major discipline incidents, which are of primary concern when attempting to maintain an appropriate education environment. At ABC High School, teachers and administrators only give a student a referral for things such as fighting, bullying, blatant defiance towards a teacher, cheating, theft, drug use, accumulating an excessive amount of minor infractions (detentions), and similar extreme behaviors. This practice corresponds to what occurs on the national level (Frank, McIntosh, & Spaulding, 2010). By focusing only on significant behavior problems that warrant a referral, and not on lunch detentions or other minor infractions, this study isolated which students (athletes or nonathletes) were responsible for the most disruptive types of behavior issues.

Another reason office discipline referrals were chosen as the method for gauging behavior was because they are a common form of intervention across all public schools and, unlike detentions, are typically coded and saved in student records. Because this practice is widespread and the data are kept for multiple years, future researchers can readily repeat this study at other schools. Other forms of intervention are not adequately standardized or recorded to be effective as a sound basis for study, whereas office discipline referrals are a valuable source of data since they are already collected, easily available, and cost-effective (Frank et al., 2010). These traits made it an ideal choice for quantifying student behavior.

Grade point averages were chosen as the measure for academic achievement, since most schools keep long-lasting GPA records, and they are an effective means to judge a student's scholastic efforts. A recent study found that a student's high school GPA was as good or better a predictor of college academic achievement than standardized tests, such as the SAT (Franks & Hiss, 2014). Out of the 123,000 students included in their study, there was no considerable difference in the college GPAs of students who were required to submit test scores for college entrance as compared to those who simply submitted their high school GPAs. Other research also indicates an individual's grade point average is a strong predictor of academic success, even with the understanding that there are wide variations in curriculum and in how teachers award grades (Davy, Doolan, & Higgins, 2007). Likewise, a study conducted by researchers at the University of California, Berkley found that high school grade point averages are consistently the best predictor of four-year college outcomes (Geiser & Santelices, 2007).

Thus, based on the current literature, there is strong evidence to support that GPAs are a worthwhile measurement to study.

As mentioned, this was a quantitative study, following a causal-comparative approach that relied on historical school records for data. This was done because it provided concrete, analyzable facts, and it was the most efficient means to start investigating whether school athletics had a definitive influence on student behavior and GPAs. Using school records to draw conclusions, as opposed to qualitative measures such as opinion surveys or observation, allowed me to obtain answers that were not based on people's views or perceptions. This differentiation was important to the study, since the general public has strongly formed beliefs on the benefits of athletics, and one of the major points of this study was to verify whether those views are correct. Quantitative research in general is valued for its ability to provide conclusive results that can be inferred to larger populations (Johnson & Vanderstroep, 2010), and because it can produce reliable results even with relatively small sample sizes (Creswell, 2014). These traits were vital for this study, since it was meant to provide findings that all public schools may find valuable and because the included sample size of a single school is small when compared to all public school students throughout the United States.

A quantitative approach was also preferred because it did not require any direct participation from students. This meant the study could proceed without interfering in the students' lives, and they could not influence the outcome of the results in any way, particularly since the study began and data were gathered after the events occurred. Conducting qualitative studies with children and young people requires an additional

level of care and diligence, as researchers must take extra measures to protect their rights. For example, parental consent is required and researchers must ensure no mental or physical harm will befall the child (Brady, Davey, & Shaw, 2011). While certainly possible, such efforts are challenging since young people have widely varying sensitivities and can react unexpectedly to new situations. Also, young people are still formulating their own self-awareness and can struggle with expressing their thoughts and feelings accurately (Clark, 2011). This can pose a problem when attempting to gather conclusive information from children for the purposes of research. The design of this study avoided those factors and the general challenges associated with conducting qualitative research with young people. Instead it focused on quantitative data, which was sufficient for the purposes of this project.

A final deciding factor for using quantitative methods in this project was the ready availability of student population, GPAs, and referral numbers at nearly all public schools in the United States. This means that other researchers can easily reproduce this study at other schools or evaluate these results for accuracy.

Setting and Sample

The sample for the study came entirely from a single, South Carolina public high school. Although I accumulated all the data in the 2012/2013 school year, the information used in the study includes the 2009/2010, 2010/2011, and 2011/2012 school years. According to the statewide assessment data document, during the selected research period, the school averaged 1,443 students, of which approximately 79% were White, 8% were African American, 7% were Hispanic, 3% Asian or Pacific Islander, and

3% were of two or more races. The school has maintained an 18:1 teacher to student ratio, has a dropout rate of approximately 2%, and regularly scores slightly better than similar schools on standardized tests.

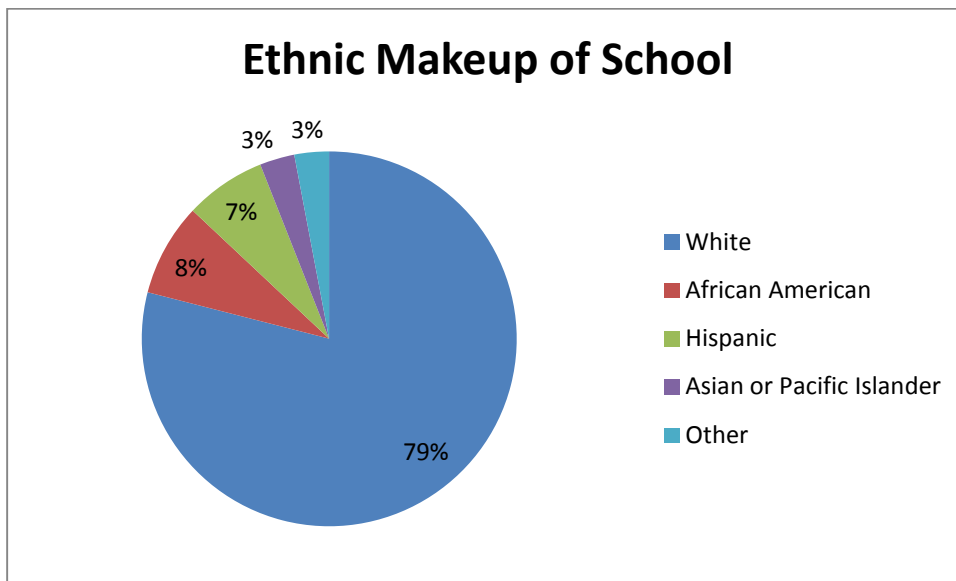


Figure 1. Ethnic population percentages at ABC High School.

For each year investigated, data from the entire student population were gathered. This meant the discipline referrals were counted for every nonathlete as well as for every athlete. Students who did not complete the school year or quit their sports team prematurely, other than for reasons of injury or illness, were not considered. Having all student data included in the study, and not merely a sampling of students, allowed for the largest sample size and therefore the most accurate conclusions for this particular school. This school was chosen strictly for convenience purposes, yet its average yearly population of 1,443 students was large enough to provide an adequate sample size for

analysis even when considering the approximately 14.8 million students in US public high schools (Institute of Education Sciences, 2013). This conclusion was based on a standard sample size formula for infinite populations, which is appropriate when dealing with populations of 50,000 or more (Israel, 2013). For this calculation, the z -value, or confidence level, was set at 95%, the p -value was 0.5, and the confidence interval was 4%. Based on these standards, the minimum sample size equaled 600, which was well below the study's average sample of 1,443 students.

The only area where the entire school population was not considered was in regard to grade point averages. While I would have preferred to use GPA data from the entire student population, ABC High School only maintained permanent GPA records for senior students. Consequently, GPA comparisons between athletes and nonathletes were limited strictly to twelfth-graders. The sample size of seniors fell between 252 and 355 students, and while these numbers were not adequate to make nationwide conclusions, they were sufficient sample sizes to make reliable deductions about ABC High School. For instance, to maintain a confidence interval of 6%, which falls within an acceptable confidence range (Devore, Peck, & Olsen, 2011), the minimum sample sizes were 225 students, 226 students, and 228 students for the respective 2009/2010, 2010/2011, and 2011/2012 school years.

The only outside participants in the project were school officials whose involvement was necessary for accessing and organizing school records, such as guidance personnel who were needed to acquire student population and GPA numbers. Similarly, the athletic director, who maintains lists of student athletes, was needed to accurately

differentiate each student as either an athlete or nonathlete. School administrators and district superintendents granted permission to these school officials to access and provide me with relevant data.

Data Collection and Analysis

School officials and guidance personnel provided the cross-sectional data used in the study. These data listed all students from each school year along with information regarding their GPAs and discipline referrals. The office personnel then delivered the student GPA records to the school athletic director who designated each student, from all three school years, as either an athlete or a nonathlete. It was assumed all data provided from school personnel were accurate. The athletic director used saved lists of student names kept from yearly sports award ceremonies to identify the athletes on the school records. Once the designations were made, the athletic director eliminated all student names from the list, so I only knew the students as either an "athlete" or "nonathlete" and never associated any of the data with an individual's name but merely designated them as "athlete 1," athlete 2," etc. This approach was necessary to protect the privacy of the students, to prevent bias, and to avoid associating any facts with a particular student's name. This method for collecting and organizing the data was approved by the IRB, as noted in the IRB approval letter in Appendix B.

I then determined the average number of discipline referrals for each group, athletes and nonathletes, as well as the average GPA for each group. This analysis was designed to provide evidence of any significant differences between athletes and nonathletes. The means for analysis were described by the following hypotheses:

Hypothesis 1: High school athletes will have higher GPAs than nonathletes.

H_0 There is no difference in grade point average between high school student athletes and nonathletes.

H_1 There is a difference in grade point average between high school student athletes and nonathletes.

Hypothesis 2: High school athletes will have less disciplinary referrals than nonathletes.

H_0 There is no difference in the number of disciplinary referrals between high school student athletes and nonathletes.

H_1 There is a difference in the number of disciplinary referrals between high school student athletes and nonathletes.

The acceptance or rejection of these hypotheses helped answer the overarching question of whether participation in high school athletics made a significant difference on student discipline referrals and grade point averages as compared to students who did not participate.

I assessed the hypotheses involving grade point averages and discipline referrals using multiple *t*-tests to identify differences between athletes and nonathletes. I included every enrolled student for each year in the data to find the mean number of referrals for nonathletes versus the mean number of referrals for athletes. Similarly, the mean GPA for all senior athletes and nonathletes was calculated. Once the means were found for both groups in both variables and the standard deviations considered, I analyzed them for

trends or patterns and evaluated their p -values. The group with numerically higher GPAs was considered to have significantly greater GPAs than its counterpart if the p -values were less than 0.05. This p -value is standard in most t -tests and is suitable for rejecting the null hypotheses (Wooldridge, 2012). For the same reasons, a group's behavior was judged superior if it had less referrals on average as compared to the other group and if the p -values were less than 0.05.

Limitations

A limitation of this study is the sample was only from one school, so it cannot be assumed that the findings will hold true for other schools; although the sufficient sample size in regard to discipline referrals suggests other educators could infer the findings also apply to their schools. Greater understanding about this issue can be acquired from a larger and lengthier study, particularly one that includes larger samples for GPA, but this research can serve as an early indicator and launching point for further investigation. In addition, because the results were from only one geographic area, the study's conclusions cannot be generalized to other geographic/cultural regions but simply give insight into what may occur. Although multiple ethnicities were represented in the sample, it was composed predominantly of Caucasians; thus, conclusions drawn about minorities may be limited in scope and require further research from more diverse schools. Finally, because this study was based entirely on numerical data, it did not address the non-quantifiable variables that may have led to the outcomes. For example, if athletes were found to have higher GPAs and lower discipline referrals than nonathletes, this research

did not explain what it is, precisely, about athletics that contributed to such improved success.

Data Analysis and Results

School guidance personnel provided the raw data regarding school population, GPA, and discipline referrals. They then passed on this information to the school's athletic director who separated the students into two groups: those who participated in school sponsored athletics and those who did not. The athletic director then relayed to me these raw data.

Based on the raw data, there were 932 nonathletes and 508 athletes in the school during the 2009/2010 school year. During this year, nonathletes received 2,663 referrals and athletes received 168 referrals, which equated to 2.86 referrals per nonathlete and 0.33 referrals for athletes. The average GPA for nonathletes was 3.176 versus 3.656 for athletes. When compared to each other, the athlete group had 2,495 less referrals than the nonathlete group and had GPAs that were an average of 0.48 points higher.

For the 2010/2011 school year, there were 941 nonathletes and 511 athletes. The nonathletes received 2,579 referrals and the athletes had 156 referrals, which equaled an average of 2.74 referrals per nonathlete and 0.31 referrals for athlete. Nonathletes earned an average GPA of 3.268 whereas athletes had an average GPA of 3.316. When compared together, the athletes had 2,423 less referrals than nonathletes and had slightly higher GPAs with an average of 0.048 additional points per student.

During the 2011/2012 school year, there were 1,007 nonathletes and 534 athletes. The nonathletes had 1,842 referrals and the athletes had 30 referrals, which resulted in an

average of 1.83 referrals per nonathlete and 0.056 referrals per athlete. It should be noted that during the 2011/2012 year ABC High School enacted a disciplinary intervention program, which consequently lowered the recorded discipline referrals for all students. This explains why the referral numbers were lower overall during that final year as compared to subsequent years. Nevertheless, that change did not compromise the data or the study, since all students were included in the intervention program, and both athletes and nonathletes experienced a reduction in recorded referrals. Also, the objective of the athlete/nonathlete comparison was to contrast these two groups with each other on a yearly basis and not to compare them to previous years. In the final year, both groups were still contrasted to each other, regardless of how the school chose to record referrals. Therefore the school changing referral systems had no particular bearing on the study, since both athletes and nonathletes were subjected to the new policy and could still be compared to each other under the new standards.

The average GPA for nonathletes during 2011/2012 was 3.061 and 3.618 for athletes. When contrasted with nonathletes, the athletes had 1,812 less referrals and an average of 0.58 additional GPA points. Discipline referral and GPA data for all three years are illustrated in Figures 2 and 3.

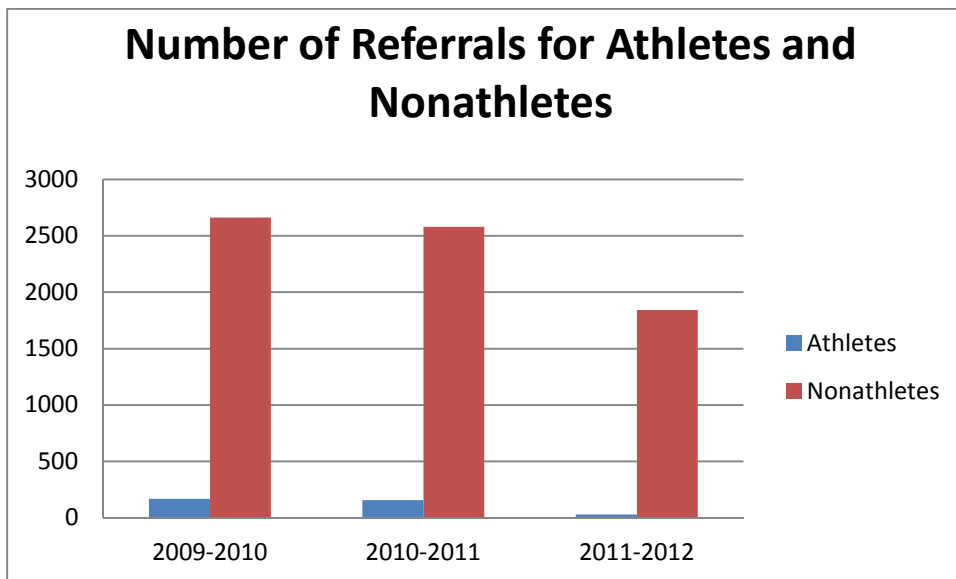


Figure 2. Comparison of referral numbers for athletes and nonathletes for school years 2009-2012.

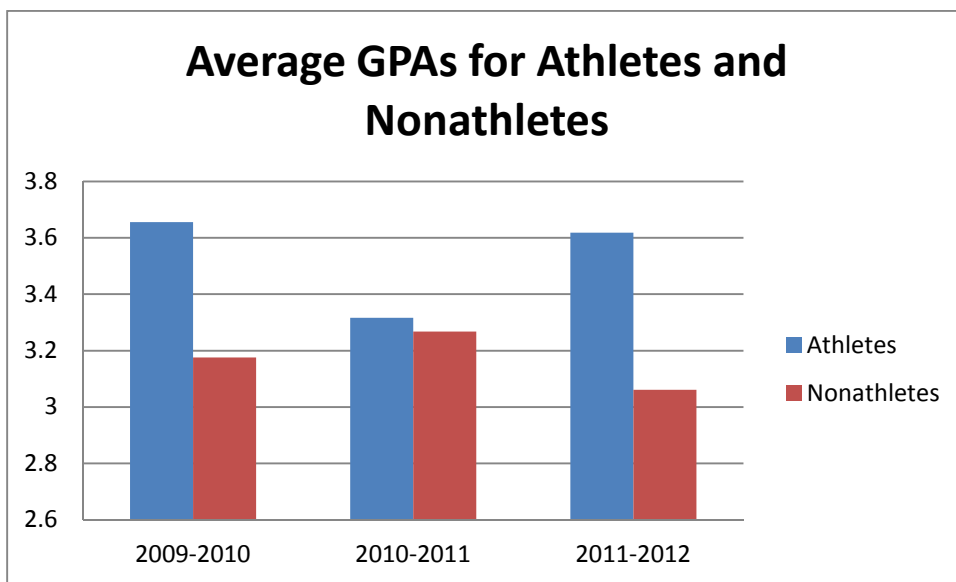


Figure 3. Comparison of average GPAs for athletes and nonathletes for school years 2009-2012.

According to the data, athletes had far fewer discipline referrals, and their GPAs were somewhat higher than nonathletes over the three year time span. An analysis of those three years is represented in the Figure 4, which shows consistent differences in terms of referrals for each year and slight, yet constant, differences in GPAs between these two groups.

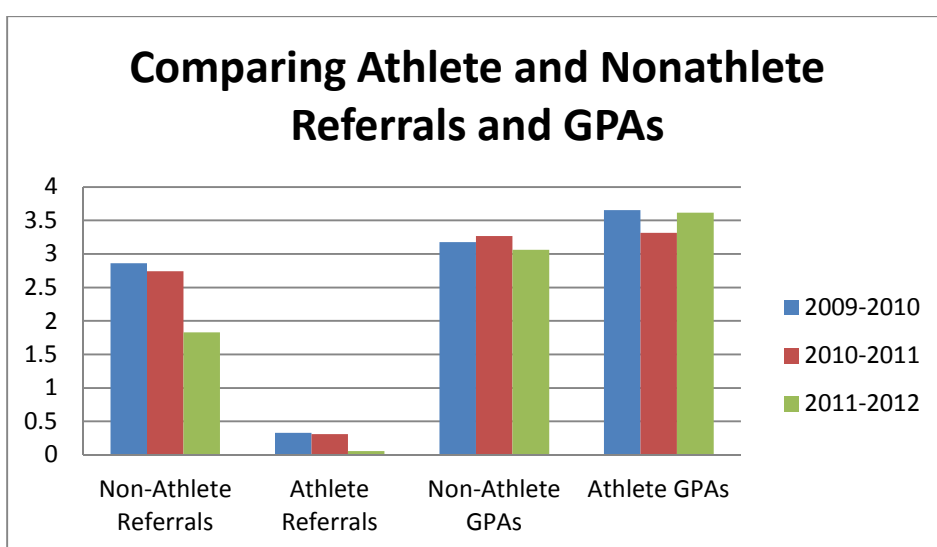


Figure 4. Comparison of average GPAs and average referrals per student for school years 2009-2012.

To determine if the variations between the two groups were statistically significant, I used a *t*-test of the difference of means. Test statistics were calculated and a *p*-value was determined. A *p*-value less than the level of significance (0.05) indicated the sample provided strong evidence against the null hypothesis. A *p*-value greater than 0.05 indicated the sample did not provide strong sufficient evidence to reject the null

hypothesis. These numbers were analyzed mathematically and depicted in box plots, which are available in Appendix C.

As displayed in Table 2, results for 2009/2010 showed a significant difference between nonathletes and athletes for the number of discipline referrals ($p < .001$). In 2010/2011 there was a significant difference between nonathletes and athletes for the number of discipline referrals ($p < .001$). Similarly, in 2011/2012 there was a significant difference between nonathletes and athletes in terms of discipline referrals ($p < .001$). For each of these school years, as shown in Table 3, athletes had lower amounts of referrals in comparison to the rest of the student population. In regard to GPA, results showed that in 2009/2010 athletes had significantly higher GPAs than nonathletes ($p < 0.001$). In 2010/2011 there was not a significant difference between athletes and nonathletes for GPAs ($p = 0.673$). In 2011/2012, athletes had significantly higher GPAs than nonathletes ($p < 0.001$).

Table 2

Referral t-Test Results for Athletes and Nonathletes

<i>Type of Student</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Standard Error Mean</i>	<i>p-value</i>
Nonathlete 2009-2010	2.68	4.3	0.14	$p < 0.001$
Athlete 2009-2010	0.33	1.38	0.061	
Nonathlete 2010-2011	2.74	3.91	0.14	$p < 0.001$
Athlete 2010-2011	0.31	1.58	1.58	
Nonathlete 2011-2012	1.83	3.23	0.1	$p < 0.001$
Athlete 2011-2012	0.056	0.368	0.016	

Table 3

GPA t-Test Results for Athletes and Nonathletes

<i>Type of Student</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Standard Error Mean</i>	<i>p-value</i>
Nonathlete 2009-2010	3.176	0.828	0.056	$p < 0.001$
Athlete 2009-2010	3.656	0.732	0.078	
Nonathlete 2010-2011	3.268	0.835	0.059	$p = 0.673$
Athlete 2010-2011	3.316	0.701	0.097	
Nonathlete 2011-2012	3.061	0.885	0.054	$p < 0.001$
Athlete 2011-2012	3.618	0.777	0.084	

In summary, the data analysis shows that athletes at ABC High School had notably higher GPAs than nonathletes for all three years. Also, it is reasonable to assume that, overall, the athletes had significantly higher GPAs than nonathletes, since the athletes had p -values of less than 0.05 for two out of the three years.

Conclusion

Society assumes much about the role sports has on student development, but there is a lack of conclusive, empirical evidence to support whether or not participation in school-sponsored athletics influences behavior and academic success. The aim of this project was to quantify the impact athletics has on GPAs and discipline referrals. To achieve that, the GPA and referral data for athletes and nonathletes at a suburban public high school was analyzed and compared. Using a quantitative methodology that involved independent samples, it was determined that athletes had significantly less discipline referrals, with p -values less than 0.001 for all three years, and had higher GPAs than nonathletes, with p -values less than 0.001 for two out of three years. Therefore, H_0 of Hypothesis One, which stated there is no difference in grade point averages between high school student athletes and nonathletes is rejected. Similarly, H_0 of Hypothesis Two, which stated there is no difference in the number of disciplinary referrals between high school student athletes and nonathletes is also rejected. The results do, however, support the alternative hypotheses in both Hypothesis One and Two, which posit there is a difference in GPAs and referrals between athletes and nonathletes. Because athletes had statistically higher GPAs and lower discipline referrals than nonathletes, the overarching

question is answered; participation in high school athletics does indeed make a positive difference on a student's discipline referrals and grade point averages.

Possible explanations for why athletes had fewer discipline issues and higher GPAs than nonathletes are: 1) athletes had greater motivation to succeed in school (to maintain athletic eligibility); 2) they felt more a part of the school community; 3) they had a positive outlet for releasing energy and stress; and 4) their coaches served as an added mentor and support system. Researchers should replicate this study in other schools with diverse populations to help validate results from this study.

These findings help confirm the common perception that athletic participation benefits student development. The results of this study are expected to add to the current literature on the impact of school athletics. I also desire to enact social change by sharing the findings and suggested policy recommendations, as detailed in Appendix A, with district officials and fellow educators. They may apply the study's findings and policy recommendations to their own schools and classrooms to increase student achievement and lower behavioral problems. The following section more thoroughly discusses the implications and applications of this project and its findings.

Section 3: The Project

Introduction

This section gives insight into the findings and methodology detailed in Section 2 by explaining the goals and rationale for investigating the influences athletics had on ABC High School students. Relevant literature is discussed to demonstrate the evidenced positive effects that physical fitness and team participation has on adolescent development. This literature highlights the merits of this study and reveals how the findings fit in with similar research. Furthermore, suggestions for implementation of the evidence are presented, which includes proposals of how to add additional athletic opportunities into schools. It is recognized that putting any new program into practice is not without challenges, and as such the potential resources and barriers that schools may confront when attempting to enact recommended programs is also discussed. Finally, the project, as a whole, is evaluated along with an explanation of how the results found at ABC High School and the corresponding recommendations may induce change in the local community and in the educational system as a whole.

Description and Goals

I designed this project with the intention of learning more about the influence athletics has on student behavior and academic success and then to design a policy recommendation for district officials and other educators. With that aim, I collected student GPA and referral data, spanning a three-year time period, from a suburban high school. Students were placed into either a nonathlete or athlete category, and then I

evaluated the average number of discipline referrals as well as the average GPA for each group for all three years.

Although much more investigation is needed to make any general conclusions for diverse populations, the goal of this project was to gain insight into how student participation in high school athletics may benefit or impair academic and behavioral success and to provide policy recommendations based on these findings. With these insights and recommendation, researchers have a stronger basis for further studies, and educators and administrators can use it to make more informed decisions about how they choose to promote athletics within their schools. In extension, this project provides one possible strategy (athletic participation) to help solve the issue of perpetual discipline problems in schools, as mentioned in Section 1 of this paper. Educators may use this information as a basis to encourage student athletic participation as a way to curb problem behaviors in the classroom and use it as a way to motivate students to perform better academically.

Rationale

I chose this particular project to test a means to address the problem of discipline issues in school environments, since athletic participation has a reputation for providing broad-ranging benefits to adolescents even when they are not on the athletic field or court. It is commonly thought that school sports give students an outlet to release energy which may otherwise come out at inopportune times, such as in the classroom (Centers for Disease Control, 2010). Others view school sports as a place for students to learn interpersonal skills, self-control, and to gain confidence (Whitmer, 2013). Furthermore,

most schools require students to maintain certain GPAs to join and remain on athletic teams. Based on these factors as well as the results of this study, students who participate in sports are more likely to behave better and have higher scholastic performance as compared to the average student who is not on a school athletic team.

However, based on the current literature discussed in Section 1, it is not clear whether these beliefs about the benefits of school athletics are indeed facts or simply assumptions. Therefore, educators cannot unquestionably endorse athletics as a student improvement strategy without further investigation into the real effects athletic participation has on students. This study compared those effects in two areas, number of discipline referrals and GPAs, since those areas are typically strong indicators of how a student behaves at school (Algozzine, Homer, & Putnam, 2012; Irwin, Sprague, Sugai, Tobin, & Vincent, 2004). This project intentionally focused only on athletes, nonathletes, GPAs, and discipline referrals (ignoring all other variables) to see if there was any definitive connection between those factors. Ultimately, this project helped answer the question of whether school athletics results in behavior and GPA benefits for participants. Educators can use this information to assist in remedying the problem of perpetual discipline problems in schools.

As outlined in Section 2, the rationale for choosing a quantitative and not a qualitative approach was largely based on the fact that it enabled me to use numerical data and did not depend on the varying perceptions of people. While it is recognized that student discipline problems stem from varied emotional, social, and lifestyle issues which may demand qualitative research, those variables are important to the larger discussion of

how to curb discipline problems in school (Gresham, Hope-Doolittle, Seversona, & Walkera, 2007; Jaffee, Odgers, & Strait, 2012). This study was meant to highlight if athletic participation, specifically, had an influence on students' behavior and achievement, despite their varying backgrounds and experiences. Therefore, a quantitative design with numerical data was more suitable than a qualitative approach and an efficient way to gather the appropriate data.

Admittedly, the findings of this project do not provide an all-encompassing solution to the problem of perpetual discipline referrals in schools. However, encouraging students to take part in school athletics may be one strategy for improving student behavior and grades. Educators can combine this strategy (encouraging student participation in school sponsored sports) with other tactics to create a more comprehensive plan for reducing discipline problems and poor academic performance. When included as part of a wide-ranging student improvement plan, it could contribute to a reduction in student misbehavior and academic underachievement.

Review of the Literature

Public schools across the United States and throughout the world are researching, creating, and implementing a wide range of policies intended to curb discipline issues and boost academic achievement (Plotkin, 2014). There is an assortment of theories regarding what types of policies and practices are most effective at improving school climates and fostering student motivation, yet there is little consensus on what practical measures educators should employ. Theories range from instituting more authoritarian environments to giving students greater autonomy, as well as an assortment of

philosophies between these two paradigms (Edwards & Watts, 2010). I have noticed through my own professional experience that educators often choose a classroom or school management program based on their personal philosophies while not taking into account whether empirical data support their beliefs. Of course there are research based strategies proven to improve student behavior and academic achievement, and it was the aim of this study is to add to that body of evidence. I also desire to enact social change by sharing the findings and suggested policy recommendations (see Appendix A) to district officials and fellow educators, so they will be better-prepared to create all-inclusive student achievement plans based on empirical facts.

The motive for choosing to study athletic participation's impact on behavior and academic achievement was based on an array of research showing that taking part in sports has many benefits even beyond physical fitness. The following section includes an analysis of some of the varied positive effects athletics has on adolescents, which includes higher GPAs, superior standardized test scores, more adept interpersonal skills, and heightened cognitive function. This literature emphasizes the power that sports and physical fitness has on adolescent development and why educators should use it as a method for improving student performance and school climates.

As evidence of the relationship between athletic participation and academic achievement, a Kansas study that compared the academic performance of high school athletes and nonathletes found that, out of the 139,349 high school students considered, school athletes had higher graduation rates, higher GPAs, and scored better on state assessments than nonathletes (Favor & Lumpkin, 2012). This was true for both males

and females and across a range of ethnicities. Favor and Lumpkin admit that, because the study did not control for other factors such as socio-economic status, family background, etc., the results do not explicitly indicate athletic participation was the cause of higher achievement. However, sports may have positively influenced academic achievement in this instance for three main reasons. Firstly, participation in high school sports in Kansas requires students to maintain certain academic standards to retain eligibility. Therefore, athletes had greater motivation than nonathletes to pass classes and have high GPAs. Secondly, as Favor and Lumpkin suggest, encouragement from coaches was influential for the athletes and these adults served as another outside motivator for athletes to maintain eligibility. Thirdly, sports participation may have helped the athletes learn better self-discipline, time management skills, and competitiveness which they applied to their scholastic efforts. These three factors are all mentioned in the literature as having positive influences on student athletes (see Section 1) and are likely among the primary reasons the students in Kansas excelled academically, and not merely physically, from athletic participation.

Similar to Favor and Lumpkin's (2012) results, Australian researchers found that adolescents who participated in a developmental soccer program experienced positive peer, prosocial, and cross-cultural relationships (Bunder-Birouste et al., 2013). In that study, researchers interviewed 142 school-aged adolescents and surveyed their responses to questions regarding emotional symptoms, personal relationships, feelings of inclusion, and other prosocial metrics. The researchers found that boys and girls who regularly participated in the soccer program had significantly higher interpersonal skills as

compared to those who did not attend, showing that the sport had benefits beyond physical fitness.

Although the Bunder-Birouste research did not measure how soccer participation shaped the young people's academic performance, a different study showed how positive social relationships, interpersonal skills, and overall perceived social support contribute to improved behavior in the classroom and better academic achievement when compared to students who lack a peer support system (Ahmed, Der Werf, Kuyper, & Minnaert, 2008). Researchers in this study argued that this was because peer relationships develop adolescents' emotional and motivational functioning, which, in turn, enhances their academic competence, interests, and enjoyment. Therefore, if athletics do in fact provide an outlet for fostering such positive peer relationships, as the Bunder-Birouste study indicates, then this serves as further evidence that athletics have wide-reaching effects and can even indirectly improve school behaviors and grades.

As further evidence of the many benefits of athletics, multiple studies have shown that general physical fitness improves cognitive function (Beverly, Greene, 2013; Carrol-Scott, Gilstad-Hayden, Ickovics, Peters, McCaslin, Schwartz, 2014; Cross, Davis, Hollis, Low, Murray, 2007; Davis, Miller, Naglieri, & Tomporowski, 2008; Dishman et al., 2006; Martin, Saunders, Shenkin, Sproule, 2014; Tobin, 2013). Physical activity produces a variety of biological responses that alter and regulate the structure and functions of the brain. Physically fit adolescents also have greater utilization and mobilization of brain resources and carry out cognitive tasks faster than nonphysically fit individuals (Dishman et al., 2006).

This enhanced cognitive function translates to improved academic achievement and higher standardized test scores (Davis, Miller, Naglieri, & Tomporowski, 2008). The research shows a relationship between physical fitness and improved mental activities, such as learning, thinking, and remembering. Therefore, it is in schools' best interests to provide students with more opportunities for physical activity both in the school day and through extracurricular sports. Despite these studies' findings, the amount of time school children are engaged in physical activity and recess has dropped considerably in recent years and often for the purpose of creating more time for academics (Allegrante, 2004). This cutting back of opportunities for physical fitness in favor of greater academic time, however, may have the opposite effect of what some educators intend, since the research shows that being physically fit can improve learning.

Perhaps the most extensive research on the positive effects of sports participation comes from the *Relationship Between Youth Sport Participation and Selected Health Risk Behaviors from 1999 to 2007* (Donovan, Rienzo, & Taliaferro, 2010). This investigation examined the relationship between sport participation and a variety of health risk behaviors among high school students, including academic achievement, self-esteem, juvenile arrests, teen pregnancies, school dropout, weight control, substance abuse, and more. The analysis revealed that most adolescents experienced benefits in all categories, with the exception of a few subgroups, such as minority Hispanic and Black males, who showed no association between sport participation and an increase in fruit and vegetable consumption. Also, Hispanic and Black male athletes were more likely to engage in physical violence at school than nonathletes. While understanding the

discrepant results between minorities and other races could make a valuable topic for future research, these deviations do not detract from the overall conclusion of the Donovan et al. (2010) study, which found that athletics have academic and behavioral benefits for most students.

The similarities and consistencies of the findings in the literature suggest that participation in sports can cause measurable improvements in a student's behavior, academic performance, and in nonschool life. Even elite athletes, whose activities often cause them to miss class time, are able to use the skills and advantages they develop from sports (self-regulation, time management, motivation, cognitive enhancement, etc.) to excel academically (Elferink-Gemser, Jonker, & Visscher, 2011). These theories provided the basis of this study, and many of the practices used by Favor and Lumpkin (2012), such as evaluating GPA and discipline referral data from school records, were used as models for the development of the project. The project's findings, that athletes had higher GPAs and less discipline referrals than nonathletes at ABC High School, match the results of similar research and provide further evidence of the positive connection between participating in high school sports and academic achievement.

Although educators can use this study as well as others to make a case for increasing the importance and breadth of school sponsored sports, there are other contrary studies, as discussed in Section 1, that show an association between some athletes and negative behaviors. Therefore, more research is necessary to pinpoint precisely how high school sports can influence students of different genders and backgrounds. Also, future research should investigate the effects of different types of

sports to determine, as Adlaf et al. (2007) and Barnes et al. (2007) found, if certain athletics, such as power sports, tend to influence adolescents negatively. However, judging by the consistent findings of the many related studies, it seems there is a growing body of evidence showing students experience multiple academic payoffs by being school athletes. Still, even with these data, school districts across the nation are eliminating and reducing the budgets for sports programs and coaches in an effort to minimize district expenses and deficits (Deford, 2011). When one considers the problem of continual discipline referrals as well as the all-important goal of maintaining high GPAs, it seems premature to reduce sports programs when they have shown to have positive school wide effects. These issues inspired the content of this project, with the aim that this research could empower educators to make more informed decisions about how to promote athletics within their districts.

Implementation

After completing this project and reflecting on others' research, it appears there is adequate confirmation that students who participate in school-sponsored sports are more likely to behave better and have higher academic achievement in school as compared to nonathletes. Educators can apply this knowledge to their own schools and districts by implementing programs that provide students with more opportunities to participate in athletics. Although interscholastic sports was the focus of this study, based on the research mentioned in the above section, general physical fitness also increases student learning and performance. That knowledge, combined with the results of this study, suggests that creating ways for students to be more physically fit in the school day

through a mixture of extracurricular and interscholastic sports could offer children and schools a host of benefits, including helping to solve the issue of perpetual discipline problems and strengthening academic achievement.

Potential Resources and Existing Supports

Most schools already have an assortment of resources at their disposal that could aid in expanding sports and fitness programs for students. Coaches, physical education teachers, and community volunteers can collaborate and use their expertise to develop new types of programs that include a larger variety of sports and allow for students of varying athletic abilities. Currently, in most public schools, students must "try out" for sports teams and are only selected to participate if their skills exceed most of their peers. While this practice may give coaches and schools the best chance of having winning teams, it denies new or developing athletes (who are not chosen for the team) the many benefits that come from sports participation. As an alternative, schools could offer a wider range of less competitive, nonvarsity sports, since increased opportunities have shown to amplify participation among students (Cohen, Schuster, Taylor, & Zonta, 2007).

Even if a school does not have adequate resources to expand interscholastic athletics, it may be able to implement less costly intramural sports or extend physical education and recess time. Although some fear allocating more time for athletics during the school day would detract from academic pursuits and slow learning, a study by Shephard and Trudeau (2008) and another by Ahamed, Liu-Ambrose, Macdonald, McKay, and Naylor (2007) found that adding up to an additional hour per day towards

physical education programs had no negative effect on students' academic performance, and, in fact, could result in gains in grade point averages and improve behavior.

Another option for implementation and providing more opportunities for all-inclusive sports teams is for schools to reduce their focus on expensive and demanding interscholastic after-school sports, such as football. Instead, schools could concentrate more on intramural sports which may better serve the needs of the majority of the students as opposed to the limited number of students who are chosen for the competitive, interscholastic teams. Availability of intramural and club sports have shown to increase student sport participation, which, in turn, gives more adolescents the chance to experience the many benefits associated with athletics, such as improved health, heightened cognition, social skills, and more (Casper, Bocarro, Edwards, & Kanters, 2008). Also, having an array of intramural sports could expose youth to different types of athletics and foster interest in physical fitness, for enjoyment and not necessarily for competition or winning, which lasts beyond the high school years (American Alliance for Health, 2012).

Potential Barriers

One of the major barriers to creating more sports and physical fitness programs in schools is limited funding. In economically challenged school districts, extracurricular activities, including sports, are often the first programs cancelled in an effort to reduce costs (Garcia, 2009). To counteract this, some school districts are offering "pay to play" programs where students and parents pay participation fees to offset some of the costs for the district. However, these fees, which may include registration fees, uniforms, travel

expenses, and insurance, can cost an average of \$381 per child per sport (Pay-to-play, 2012). These expenses put lower-income youth at a disadvantage and reduce the likelihood they will participate in sports. To ensure young people of all socio-economic backgrounds can participate in pay to play sports, school districts could use sliding fees (based on income) for participation, or involve the community in raising needed funds.

Another barrier to implementing more athletic programs is changing the mindsets of students and community members who may think only interscholastic sports have value. Interscholastic sports receive more attention in US public high schools than club or intramural sports, and it may take additional support and education to inform adolescents and their parents about the benefits of other types of teams and physical activities. The European model, where club and intramural sports are dominant could serve as example of how to implement non-interscholastic sports successfully (Hinzman, 2012).

Proposal for Implementation and Timetable

The process of incorporating more athletics into schools should start with a few pilot schools before implementing the practice across an entire school district. Ideally the district will give these pilot schools autonomy in designing their programs, including what types of physical fitness activities to add, how to manage those sports, when to have them, and how to secure any necessary outside funding. After a trial period of three to five years, the district can evaluate what was and was not successful in these pilot schools and, based on that evaluation, implement a comprehensive athletic expansion program for the entire district.

Although each school and district should implement an athletic system that best suits the needs and resources of their students and communities, educators can use the following implementation timetable as a guide. Many of the ideas presented, such as cultivating community partnerships and introducing programs gradually and conscientiously, are based on the work of Russ Pate in his book *Implementing Physical Activity Strategies* (2014).

Year one. Educators and coaches will take modest measures towards expanding opportunities for sports and fitness both during the school day and after school.

Suggestions include:

- Lengthen recess time.
- Lengthen physical education classes.
- Introduce one or two new intramural sports or clubs for boys and girls (poll students to find sports of interest).
- Motivate students to participate by building awareness and excitement about the new sports and possibly offering some type of physical fitness credit.

Activities started in this year should not require extra funds. Coaches and educators can merely use already available equipment and resources and rely on volunteers for executing the few new programs.

Year two. Coaches and educators will apply what they learned through experiences in year 1 towards expanding the available programs. Suggestions include:

- Add more club and intramural sports.
- Offer more physical education classes.

- Have intramural competitions during recess and after school.
- Continue to market the programs and encourage participation.
- Require students to maintain certain academic standards to join extracurricular athletics (not including recess and physical education).

Measures taken in this year will likely require extra funding or a reallocation of resources. Schools may need to modify their budgetary plans, enlist community support, or enact some type of pay to play system.

Year three and beyond. Year three and beyond will include consistently evaluating current measures and formulating plans to expand their reach and improve their success. Educators and coaches should regularly consider:

- How can our school involve more students in athletics?
- Do all students have the opportunity to participate, despite their socioeconomic status?
- Are these programs promoting health, physical fitness, teamwork, and building character?
- Are sports helping to improve school climate, lower discipline referrals, and raise GPAs?

If the majority of students are not given the chance to participate and the students and schools are not experiencing measurable improvements, then educators and coaches should reexamine the programs and their goals. While highly competitive, interscholastic sports can certainly maintain a presence in schools, they should not trump other types of athletics that offer more opportunities for students to participate. Ultimately, the school should strive to have a wide range of intramural, club, and interscholastic sports for both

boys and girls as well as provide times for students to exercise during the school day through recess or physical education.

Roles and Responsibilities of Student and Others

To make a sports implementation plan effective, students, teachers, coaches, and community members must understand their roles and execute their responsibilities properly. Students must be accepting of new athletic programs and realize the importance of physical fitness and team membership for their school careers and lives, and they must recognize that they alone are accountable for keeping academic standards and maintaining their eligibility to play. As with all athletics, students must comprehend the value of sportsmanship, dedication, and doing their best.

Teachers and coaches must encourage students to participate in athletics while also keeping the primary focus of school on academics. They can do this by enforcing eligibility standards while also teaching students how physical fitness is a part of a balanced life that helps them have a healthy body and mind. Teachers should show an interest in the sports and other extracurricular activities their students are involved in and, ideally, set an example by also engaging in physical fitness. Community members must be supportive and offer their own talents, time, and funds to help build successful programs.

Project Evaluation

This project was outcome-based and its success was strictly judged by whether or not I found a significant result—regardless if it showed there was or was not a difference between athlete and nonathlete GPAs and discipline referrals. The goal was to acquire

any type of knowledge that could help educators better understand how to promote athletics in their schools and if sports participation could improve student behaviors and GPAs. Once the data were proven reliable and the analysis accurate, I deemed the project and its construction effective. After completing the project, I determined follow-up steps by analyzing the results and data as well as by exploring similar research. With this knowledge, I sought out discrepancies in the various findings and pinpointed areas in need of further study. More research is needed to understand the ways sports affects athletes of different races and why some sports produce more positive results than others. Follow up studies could investigate a wider range of variables among more diverse populations.

Implications Including Social Change

Local Community

This project addressed the needs of learners in the local community by, first, establishing the importance of acceptable classroom behavior and how it is vital for building a positive school climate and creating an environment for academic achievement. Secondly, this project provided an analysis of a possible strategy (participation in sports) for improving student conduct, which educators and administrators can use as part of their behavior management plans. While findings are mixed, the majority of the referenced research supports the notion that student populations similar in makeup to ABC High School have less discipline referrals and higher GPAs as sport participation levels increase. Therefore, teachers, coaches,

administrators, families, and community partners within this particular community can confidently encourage school sports and know these activities are heightening student learning as well as providing a host of other benefits. Ultimately, if the findings of this project are implemented, they have the potential to make schools more effective and improve the health of students.

Far-Reaching

Schools of similar socioeconomic makeup to ABC High School can apply the findings of this project to their own systems and implement programs like the one mentioned above. By doing so they may also experience higher GPAs and less discipline referrals by creating and promoting more opportunities for students to participate in sports. Even schools and districts throughout the nation that have differing student populations can use this research and others' to make informed decisions about how athletics are approached in their schools. Overall, this project contributes to the information educators can access when wanting to understand the real effects school sports has on students. Amassing such data is important, so educators can form their athletic policies based on fact and not on common assumptions.

Conclusion

The goal of this project was to gain insight into how athletic participation impacted the academic and behavioral success of students. It was intended that this knowledge could then offer one possible solution (promoting athletics) for helping to decrease discipline problems and heighten achievement in schools. Although sports are generally thought to enhance adolescents' lives both in and out of the classroom, there is

some debate about how much of a role athletics should have in academic environments. Thus, I did not want to address this issue from a qualitative standpoint and instead opted for a quantitative approach for this project, which provided hard data and reproducible methods.

Much of the relevant literature has similar findings to those detailed in this project, namely participation in school sports does have a positive influence on discipline referrals and academic achievement. Even having general physical fitness has shown to enhance students' ability to think and learn. This implies that not only organized sports but also recess and physical education time has an important role in improving education.

Schools of similar makeup to the one studied can implement the findings of the project by creating more opportunities for students to join sports teams. Possible methods are by increasing the number of interscholastic sports, introducing club and intramural sports, and expanding the amount of recess or physical education time during the school day. Districts that enact such programs may experience a reduction in behavior problems and growth in academic achievement. Even if the findings and literature presented in this study are not used to directly enact new school programs, this information contributes to the research regarding schools and athletics. Educators can use this body of knowledge to make sound decisions about their athletic programs.

The subsequent section presents reflections and conclusions about the entirety of the project, which includes recommendations for remediation of limitations as well as further discussion on directions for future research.

Section 4: Reflections and Conclusions

Introduction

The final section of the study discusses the strengths and weaknesses of this project, which asks if participation in high school athletics has a significant difference on student discipline referrals and grade point averages as compared to students who did not participate. Additionally, Section 4 explores how I grew professionally from this project and includes analyses of myself as a scholar, practitioner, and project developer. Finally, I describe the project's potential for creating change in the educational field and beyond and suggest possible directions for future research.

Project Strengths

The primary strength of this study was the results it yielded and what educators may do with that knowledge. Because athletics are an integral part of most public schools, knowing their real effects on student behavior and performance is paramount. Analyzing the data concerning how sports participation impacts GPAs and disciplinary referrals strengthens support for athletic participation in high schools as a way to assist students who are struggling with either behavior or academic problems. When educators consider the rise in discipline issues in public schools and their potential to infringe on learning and lower GPAs (Malinauskiene, Vosylis, & Zukauskiene, 2011), they may want to utilize school athletics as a strategy for saving, redirecting, or invigorating high school students towards academic success (Chomitz et al., 2009; Cottrel et al., 2009).

Another strength of this project is the data analysis. These data provide a basis for educators to view high school sports as a variable for increasing achievement and

reducing discipline problems. I used a quantitative approach to the study, since such a method is less subjective than qualitative analyses, especially when referring to quantitative data like GPA and disciplinary referrals (Johnson & Vanderstroep, 2010). Furthermore, the use of statistical data provide less subjective material to interpret, and having quantitative data recorded and stored allows others to more readily use or refer to the information. Also, if future researchers wish to repeat the study in another school or district, they can easily replicate the methods, as GPA and discipline referrals are commonly recorded at most public high schools. They can then compare their own data to the results from this study.

Recommendations for Remediation of Limitations

A limitation of this study was that a single individual, the school's athletic director, designated the students as either athletes or nonathletes. Consequently, a correct labeling of the students was entirely dependent on the thoroughness of the athletic director's records and his accuracy in categorizing. Although this was a minor limitation, a possible solution is to have separate people coding and comparing their lists of athletes and nonathletes prior to completing the study. Secondly, the only reliable way for the athletic director to code the students was by using end of the season award ceremony rosters (events where all sports participants are recognized). Although guidance personnel had records of the students who applied for sports eligibility, these records included students who joined a team and then quit before the end of the playing season. Such students did not qualify as an athlete for the purposes of this study. Utilizing the award ceremony rosters, which only included athletes who completed the season or were

forced to sit out for medical reasons, was the most consistent way to define and label the athletes. Still, award ceremony information was not particularly accessible and may not be available in all schools. A remediation to this problem is for schools to adopt a system where students are electronically labeled as an athlete in their student profiles along with records of their length of sports participation. Such a strategy would reduce the chance for error and make the information more accessible for future study.

Another limitation was the use of only one school. Consequently, the results of this project are only directly applicable to the school in this study and those of similar demographics. An obvious remedy to this limitation is to conduct a broader study that includes a variety of ethnically diverse schools across a range of districts and states. A more widespread investigation would allow educators to draw general conclusions about the impact of athletic programs on all public high school students. Similarly, conducting a more in-depth analysis that examines ethnicities, genders, and sports separately would give more insight into these related topics. While this particular project found that the majority of athletes in ABC High School benefited from participating in sports, based on the research by Adlaf et al. (2007), Barnes et al. (2007), and Donovan et al. (2010), as described in the previous sections, it is possible that if other schools conduct similar research they may find conflicting results. In particular, it is possible that in other schools certain populations of the students are negatively impacted from sports. Or that certain sports are helpful in curbing discipline issues and promoting high GPAs while other sports induce the opposite effect. A more comprehensive inquiry would assist in

revealing what types of students benefit, why outcomes vary across populations, and what types of sports are most beneficial.

Scholarship

Completing this project has reinforced my personal belief that a scholar is anyone who learns and acquires knowledge by studying how the world works. By completing this project, I have engaged in scholarship and learned what processes are necessary to realize genuine knowledge. In the process of gathering worthwhile research and organizing my own data, I recognize that scholars have a commitment to thoroughly record and explain their methods and findings, so others can review their work and collectively decide if it contributes to a particular body of knowledge. Relaying information about sample sizes, population demographics, personal involvement, limitations, and similar details is important for understanding exactly who or what is being studied and how it compares to other research. Finding research with such traits was imperative as I analyzed the literature and reinforced in me the importance of including such details in my own project. Also, even though I had preconceived notions about the results of the findings due to my years of experience working in student athletics, I recognized that scholars must approach their research with an attitude of skepticism about their own beliefs to avoid unintentionally designing projects with biases or skewing findings. As such, I designed the study in a way that would exclude any personal bias by using only numerical data collected from outside sources.

I also understand that not all scholars agree with the findings of every study. Therefore, some may believe the results of this particular study offer support for high

school athletics while others may feel these results are not significant enough to encourage change. Furthermore, some could challenge the data or my motives, which is why it is vital that my data, methods, and evaluations are accurate and able to hold up to scrutiny. In addition to the soundness of methods and statistical analysis, one of this study's particular strengths was its ability to be reproduced. Most schools keep GPA and discipline records, which make it possible for educators or researchers anywhere to carry out similar investigations about the effect of athletics on behavior and performance. As with any worthwhile study, my findings not only offer some evidence they also raise worthwhile questions that can spark further research and bring greater knowledge to the related field. For example, this study shows some of the positive influences athletics has on students at ABC High School, yet it arouses other questions, such as whether schools of other socio-economic make ups would have different results.

Finally, I learned why it is critical for scholars to explore other's research and to get an understanding of what is currently known about a topic before beginning an investigative project. This was made evident as I reviewed the literature on the relationships between sports, academics, and student behavior and tried to get a better sense of whether my research question was valid and how it would fit in with existing research. By examining the literature, I found that other scholars had conducted studies with similar research questions as mine, yet there were discrepancies in the various findings and few that looked solely at the effects of athletics on students. This motivated me to carry out my study and add more information to the topic. Scholars consider current research (completed within the past five years) as the most useful, since it is

generally more relevant to the world and society in its present state. I found this especially true during my own research, since, in education, student characteristics, curriculums, and practices are constantly evolving and research or data from decades ago may no longer apply to modern students and educators. Choosing modern, pertinent literature was a major factor that helped me grow as a scholar and researcher.

Ultimately, all of the scholarly processes mentioned above, including using sound methods and research-based investigations, are designed to further the process of inquiry by uncovering truths and accurately sharing them. Anyone, including myself, who approaches their research with these goals is a true scholar—regardless of their career or how often they engage in study.

Project Development and Evaluation

When I reflected on the entirety of this study, I realized how its success was largely dependent on the project development and evaluation. If the project design was not sound or lacked merit then the rest of the study would have no basis. As such, it was essential to have a project that filled a gap or need in the current literature, that was designed in a sensible and reproducible manner, and that lacked bias. Organization and thoroughness was the key to executing this project.

For example, in this project I was tasked with selecting a question that needed answering or required more insight. I chose to study the relationship between athletic participation, student behavior, and student achievement, because I am interested in uncovering the best practices for helping students to succeed and there is always a need for more exploration in this field. Next, I had to design a project that could reveal any

connections between these three variables and decide whether to base the project on a qualitative or quantitative analysis. I chose a quantitative approach, as it was more appropriate for the targeted data and it did not require the collection of parental or student consent form. Still, even when using simple quantitative data, I experienced how easy it is for researchers to accidentally distort data through careless mathematical errors and, consequently, why it is vital to check calculations multiple times. I also had to resolve how to evaluate the entire project for validity and how to interpret the findings. For this I adhered to mathematical methods commonly used in similar research, such as relying on *t*-tests to compare groups and measure significance.

Many other aspects were involved in creating this project, yet all were treated with the same level of conscientiousness and with basis in literature and scientific methods. This type of systematic, research-based approach is the foundation for any reliable project design, and when it is used in conjunction with a relevant topic and appropriate evaluation, the findings are more likely to contribute to the pertinent field.

Leadership and Change

Society, technology, and academia continue to change and progress. Therefore, our leadership must adjust to maintain relevancy and meet demands. The type of change addressed in this study was the possibility of increasing the availability of high school athletic programs to encourage improvement in student behavior and grades. Results from this study indicated that participation in school athletics can lead to significantly higher GPAs and significantly lower the number of disciplinary referrals at ABC High School. This suggests that this school and schools of comparable makeup may want to

enact changes to how they promote athletics in their schools, such as providing more interscholastic sports, introducing intramural sports, or possibly increasing physical education and recess time.

If positive changes are to occur in education, leaders must be made aware of recent research and how its findings could benefit their schools and students. Researchers should offer practical suggestions to leaders on how to implement their findings, so the knowledge becomes useful instead of merely being discovered and never serving a purpose. These proposals can help leaders formulate new programs for their schools, and, because the programs are backed by data, they are more likely to garner support from the public. Overall, it requires cooperation between scholars, leaders, and community members for valuable change to occur. In regard to this study, this means I must inform leaders and stakeholders about the effects of sports participation on GPAs and discipline referrals and present possibilities for future action. It is the leaders' responsibility to impart this information to those within the educational field and decide whether or not to initiate change.

Analysis of Self as Scholar

While this project taught me the attributes of a scholar and what scholarship entails, it also helped me realize that, even though I do not have a career as a researcher, I am indeed a scholar when I seek to understand the world using a scientific approach.

In practical terms, this experience helped me improve my scholarly methods, as I now know how to complete a reputable project study and have a better grasp of what is or is not effective. This will reduce the need for as much trial and error in future studies and

ultimately streamline the process. For example, when gathering stored data, I learned the importance of working directly with those who have access to the data and permission to release the information. This was made evident when I attempted to attain GPA and discipline referral data from each of the grade level guidance counselors instead of simply going to the head of the guidance department. I should have gone to the head of the guidance department, explained what data I needed, and allowed that person to retrieve all of it at once. That one example would have saved time and energy, because I could have avoided several trips, emails, and conversations with multiple guidance counselors.

This project also prompted me to evaluate my own epistemological beliefs and what I think is the best way to know the world and acquire real knowledge. Through this evaluation I realize the ideal way to understand something (in my case, education) is by being a part of it. While some may argue it takes an outside perspective to gauge what is happening, I feel being in the educational field gives me insight into what issues exist as well as possible solutions. While I had no biases in this study and no personal investment in the results, because I work in public schools as a teacher and athletic coach, I was already aware of discipline referral problems and had personally witnessed how participating in sports helped many students improve academically and behaviorally. While it was important to empirically test my theories and not form my teaching and coaching practices based on my perceptions, I may not have known about these issues if I were not involved in education. With the more informed understanding I have about

scholarship in general as well as my own philosophies, I am more confident in moving forward as a scholar.

Analysis of Self as Practitioner

Although I am more assured about myself as a scholar, I realize that in my current career I will most often serve as a practitioner. As a practitioner it is my responsibility to use scholarship as a way to inform my actions and to make a positive difference in the field of education. As someone who has engaged in scholarship, I know how to evaluate the works of others and to determine if a study has merit.

This study has given me the opportunity to serve as a both a scholar and practitioner. As a scholar-practitioner, I not only designed and implemented this research project, but I must now put the results into practice and continually evaluate those practices to see if they are, in fact, having the anticipated effect. Based on the results of this study, I will continue my support for student involvement in athletics and encourage other educators to consider promoting sports more aggressively. If new programs are enacted based on these findings, I will persist in gathering data to see if athletics are having the desired outcome, and I may later expand this study to more thoroughly investigate other variables.

Primarily, this self-analysis has made me recognize that, to be an effective practitioner, I must always remain a consumer of research and that the informed actions of practitioners like myself and others are what will make a difference in improving education.

Analysis of Self as Project Developer

My experience as a project developer helped me realize there is no substitute for the assistance from those who are experts in their disciplines. Although I designed and completed the project on my own, there were many who provided assistance, guidance, and encouragement throughout. Relying on such individuals as well as gleaned ideas and direction from other literature was indispensable for designing a useful, informative project. Additionally, having multiple members involved in the study provided more perspectives and, with checks and balances, decreased the likelihood of error. This system was particularly efficient and is one I would use in the future.

Another element of the project that proved especially effective was outlining the overall goals of the study before designing the actual project. Every proposed element of the design was judged against these objectives, and if a specific component did not help to realize the goals then it was either modified or removed. This strategy provided an aim for the project and kept the purpose clear.

Before beginning this study, I was not entirely aware of the depth that is required for each element of a quality project. Previously I may have simply offered a cursory explanation of things like sample size, populations, and methodology, yet now I understand all these things and more require a thorough explanation as well as a critical analysis of how they fit into the current literature. Now that I have a firm grasp of what is involved in project development, I would like to undertake more extensive projects in the future.

The Project's Potential Impact on Social Change

If the results of this project continue to be acted upon, it could impact education and society at the local level by potentially enhancing GPAs and reducing the number of discipline referrals in area schools. For this to occur, student athletic participation would have to increase in some manner. As discussed in Section 3, educators might encourage students to join athletics or to at least become more physically active by offering added opportunities for sports and fitness in the school day and extracurricular. Students might also benefit from heightened cognitive function, growth in interpersonal skills, having additional sources of motivation, positive peer pressure, and the support of coaches who reinforce the importance of what happens in the classroom. These benefits translate into an improved learning environment during the school day and, in turn, greater academic achievement for all.

If future studies reveal athletic participation to have similar benefits for the majority of public school students, educators throughout the nation may decide to place greater emphasis on athletics and fitness in their districts. That would mean this study could ultimately contribute to better behaved, higher achieving students in all public schools, which would lead to a more educated nation. It is the ambitions of most schools to not only teach their students the academic curriculum but also how to be good citizens and develop positive character traits. Higher educated and better disciplined citizens create a more productive culture, as individuals have the necessary skills to work diligently and interact appropriately with others. Sports participation can help foster such skills, and while these impacts may start small, once a local area is improved then other

areas will likely follow suit. This results in an improved state, and, eventually, an improved nation.

Implications, Applications, and Directions for Future Research

This study showed a significant difference when comparing high school GPA and disciplinary referrals between athletes and nonathletes in ABC High School. Based on the data, struggling students at the high school may experience GPA and discipline improvements by joining school athletics. Fewer discipline referrals affords teachers more time to focus on instruction, assist struggling students, and to engage students in learning. Reduced discipline referrals also means administrators can devote less time to behavior issues and instead focus on other administrative duties, such as observing teachers and classes. Considering the positive relationship between sports, student behavior, and academics, decision makers at the studied school may use this knowledge to make informed choices about how they wish to promote athletics. Although sports participation is not a panacea for discipline issues and poor grades, it is one component of a comprehensive behavior and academic management plan.

Future research on this topic could be directed at comparing genders, ethnicities, grade levels, socioeconomic factors, and individual sports. For instance, the Donovan et al. (2010) investigation showed that sports participation actually heightened violence in some Hispanics and Black males. Similarly, Adlaf et al. (2007) and Barnes et al. (2007) found that athletes who participate in aggressive sports, such as football and competitive weight lifting are more likely to identify as "jocks" and engage in antisocial behavior. Still, the majority of research, including this study, suggests that sports are beneficial for

the majority of students. Therefore, understanding how and why athletics does not help some populations in terms of GPAs and discipline referrals is a particularly interesting direction to take for future research. It could also be useful to determine if participation in certain sports results in a better outcomes than other sports. Other studies could explore if an athlete's level of sports participation makes a difference or if there is a point of diminishing returns if an athlete plays multiple, demanding sports at the same time or all year long? Likewise, future researcher could analyze GPA and discipline referral data over a greater time period and at different schools to see if the results remain consistent. Regardless if the results of future studies match the findings from this project, educators can use this body of knowledge to make educated decisions that correspond to the needs of their unique demographics and situation.

Conclusion

The primary purpose of this study was to acquire knowledge that educators could use to further the success of their students. I chose to focus on athletics, GPA, and discipline referrals since athletics are commonly thought to improve students' academic performance, and GPAs and referrals are suitable measures for gauging that performance. One of the major strengths of this study is that it resulted in real, concrete data that educators can directly apply or compare to their own schools. Similarly, others can easily reproduce this project to see what type of influence sports is having on the students in their schools. Other strengths of the project are that it is an objective approach, systematically designed, and supported by research.

This project has caused me to learn much about myself as a scholar, practitioner, and project developer. Namely, as an educator who wants to make a difference in the world, I understand my obligation to be a practitioner whose actions are based on scholarly research. I also know how to judge the quality of scholarship by looking for required research and project elements, such as thorough explanations of methods, discussions of related literature (from multiple perspectives), and careful evaluations. I will hold myself to the same high standards when engaged in future scholarship and will consistently evaluate my own educational practices to see if they are effective and current with the latest research.

While this topic could benefit from further study that isolates other variables, this project will contribute to the literature, inspire reflection, and has the potential to impact social change at the local level and beyond. As schools apply the results of this study and possibly create more sports opportunities for their students, they may see measurable changes in students' behavior and academic achievement. This improved school climate could motivate other schools throughout the nation to enact similar changes and ultimately lead to generations of students who are more successful students and citizens. This will result in social change that not only benefits students and educators but everyone in society. Therefore, this study and its findings are relevant to anyone who has an interest in fostering better educated, socially adept citizens.

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Appendix A: Policy Recommendations

(double-click to launch)

Policy Recommendation with Detail

Comparing Disciplinary Referrals and
Grade Point Averages Among High School
Student Athletes and Nonathletes

by
Jack Calhoun

Appendix B: IRB Approval Letter

Dear Mr. Calhoun,

This email is to notify you that the Institutional Review Board (IRB) has approved your application for the study entitled, "Comparing Disciplinary Referrals and Academic Achievement Among High School Student Athletes and Nonathletes."

Your approval # is 12-16-13-0113116. You will need to reference this number in your doctoral study and in any future funding or publication submissions.

Your IRB approval expires on December 15, 2014. One month before this expiration date, you will be sent a Continuing Review Form, which must be submitted if you wish to collect data beyond the approval expiration date.

Your IRB approval is contingent upon your adherence to the exact procedures described in the final version of the IRB application document that has been submitted as of this date. This includes maintaining your current status with the university. Your IRB approval is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, your IRB approval is suspended. Absolutely NO participant recruitment or data collection may occur while a student is not actively enrolled.

If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

When you submitted your IRB application, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden web site or by emailing irb@waldenu.edu: <http://researchcenter.waldenu.edu/Application-and-General-Materials.htm>

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Please note that this letter indicates that the IRB has approved your research. You may not begin the research phase of your doctoral study, however, until you have received the **Notification of Approval to Conduct Research** e-mail. Once you have received this notification by email, you may begin your data collection.

Both students and faculty are invited to provide feedback on this IRB experience at the link below:

http://www.surveymonkey.com/s.aspx?sm=qHBJzkJMUx43pZegKlmdiQ_3d_3d

Alex Dohm

Research Service Specialist
Center for Research Quality
Walden University
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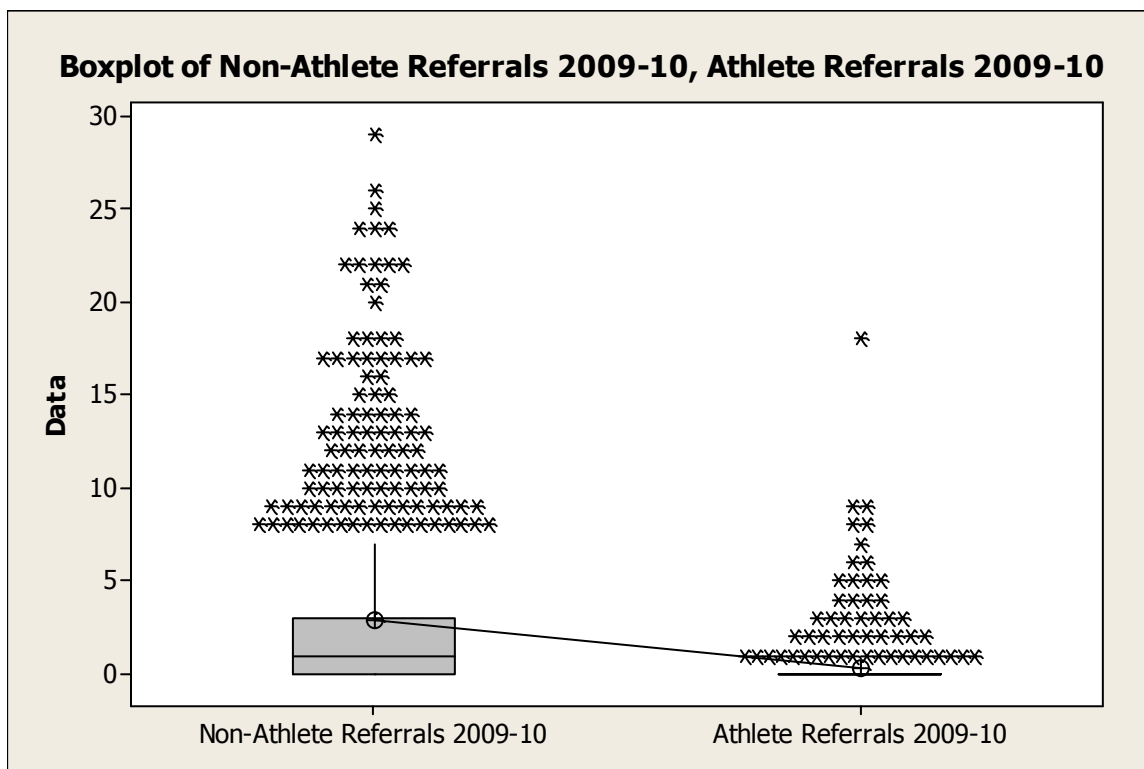
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Appendix C: Box plots and Calculations for Nonathlete and Athlete Referrals and GPA

This shows the box plots, distribution of data, and final calculations for both athlete and nonathlete referral and GPA data. It includes the 2009-2010, 2010-2011, and 2011-2012 school years. Stars indicate outliers, and the means for the two groups are shown on the box plots. Listed below the box plots are the means, standard deviations, and p -values, which were used to determine if there were significant statistical differences between the two groups.



Two-Sample t -Test and CI : Non-Athlete Referrals 2009-10, Athlete Referrals 2009-10

Two-sample t for Non-Athlete Referrals 2009-10 vs Athlete Referrals 2009-10

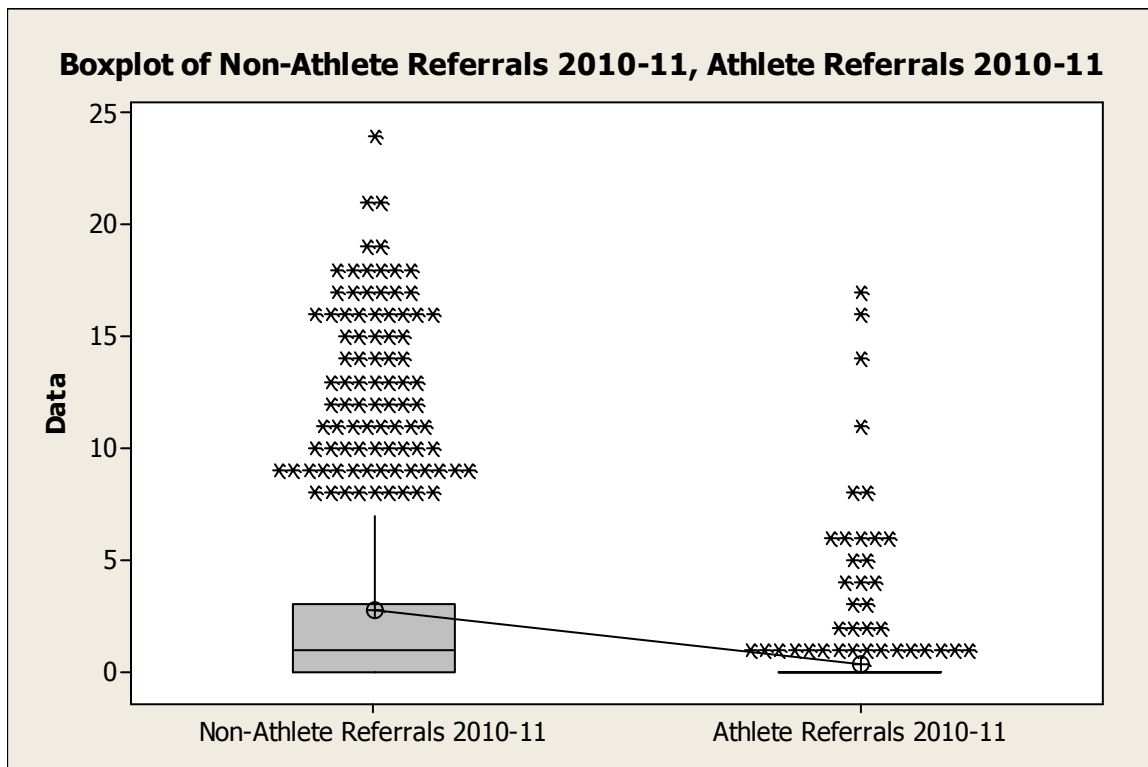
	N	M	SD	SEM
Non-Athlete Referrals 2009-10	931	2.86	4.30	0.14
Athlete Referrals 2009-10	508	0.33	1.38	0.061

Difference = μ (Non-Athlete Referrals 2009-10) - μ (Athlete Referrals 2009-10)

Estimate for difference: 2.530

95% CI for difference: (2.228, 2.831)

t -Test of difference = 0 (vs not =): t -Value = 16.46 p -Value = 0.000 DF = 1233



Two-Sample t -Test and CI: Non-Athlete Referrals 20, Athlete Referrals 2010-11

Two-sample t for Non-Athlete Referrals 2010-11 vs Athlete Referrals 2010-11

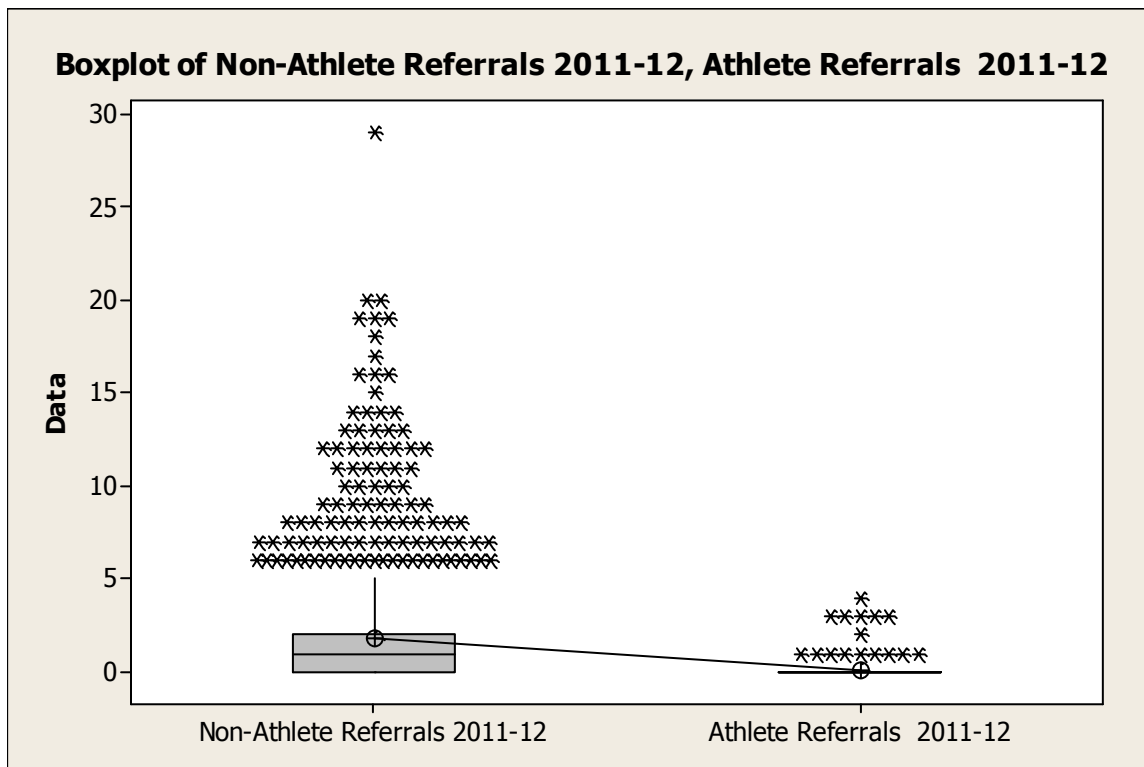
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Non-Athlete Referrals 2010-11	941	2.74	3.91	0.13
Athlete Referrals 2010-11	511	0.31	1.58	0.070

Difference = μ (Non-Athlete Referrals 2010-11) - μ (Athlete Referrals 2010-11)

Estimate for difference: 2.435

95% CI for difference: (2.150, 2.720)

t -Test of difference = 0 (vs not =): t -Value = 16.76 p -Value = 0.000 DF = 1362



Two-Sample *t*-Test and CI: Non-Athlete Referrals 20, Athlete Referrals 2011- 12

Two-sample *t* for Non-Athlete Referrals 2011-12 vs Athlete Referrals 2011-12

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Non-Athlete Referrals 2011-12	1007	1.83	3.23	0.10
Athlete Referrals 2011-12	534	0.056	0.368	0.016

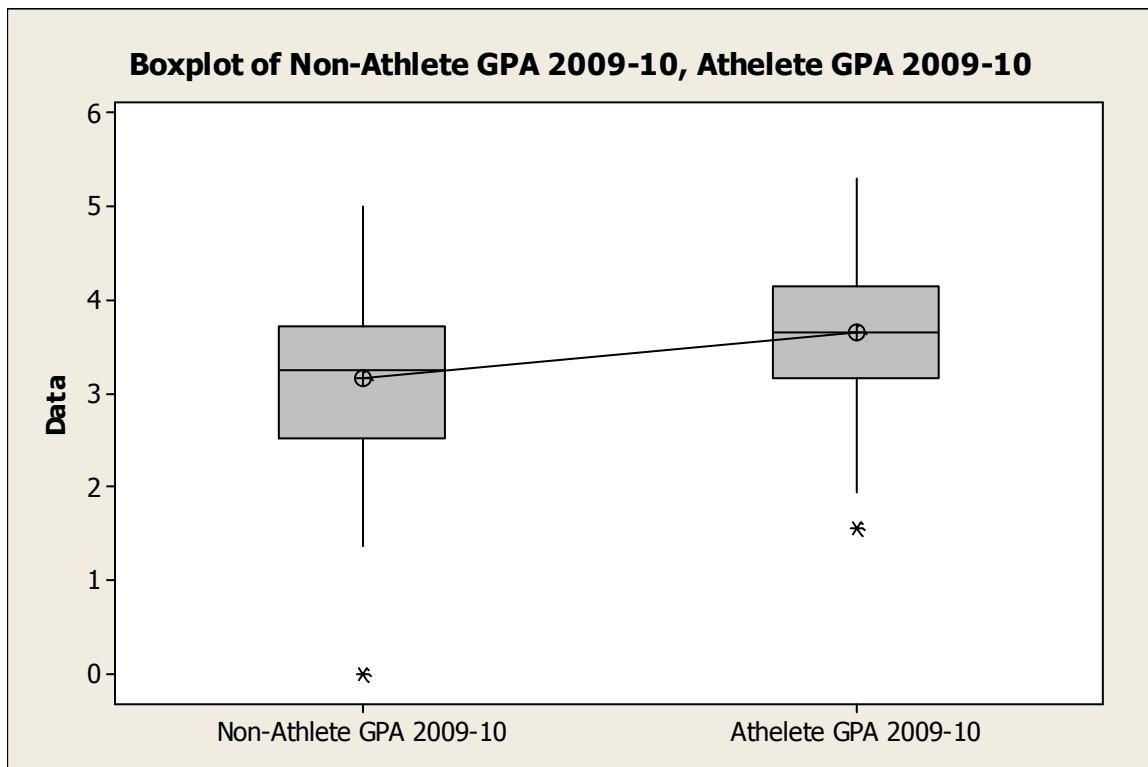
Difference = μ (Non-Athlete Referrals 2011-12) - μ (Athlete Referrals 2011-12)

Estimate for difference: 1.773

95% CI for difference: (1.571, 1.975) *t*-Test of difference = 0 (vs not =): *t*-Value = 17.19

p-Value = 0.000 *DF* =

1054



Two-Sample *t*-Test and CI: Non-Athlete GPA 2009-10, Athelete GPA 2009-10

Two-sample *t* for Non-Athlete GPA 2009-10 vs Athlete GPA 2009-10

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Non-Athlete GPA 2009-10	218	3.176	0.828	0.056
Athlete GPA 2009-10	88	3.656	0.732	0.078

Difference = μ (Non-Athlete GPA 2009-10) - μ (Athlete GPA 2009-10)

Estimate for difference: -0.4796

95% CI for difference: (-0.6692, -0.2900)

t-Test of difference = 0 (vs not =): *t*-Value = -4.99 *p*-Value = 0.000 *DF* = 180



Two-Sample *t*-Test and CI: Non-Athlete GPA 2010-11, Athlete GPA 2010-11

Two-sample *t* for Non-Athlete GPA 2010-11 vs Athlete GPA 2010-11

	N	M	SD	SEM
Non-Athlete GPA 2010-11	200	3.268	0.835	0.059
Athlete GPA 2010-11	52	3.316	0.701	0.097

Difference = μ (Non-Athlete GPA 2010-11) - μ (Athlete GPA 2010-11)

Estimate for difference: -0.048

95% CI for difference: (-0.274, 0.178)

t-Test of difference = 0 (vs not =): *t*-Value = -0.42 *p*-Value = 0.673 *DF* = 92



Two-Sample *t*-Test and CI: Non-Athlete GPA 2011-12, Athlete GPA 2011-12

Two-sample *t* for Non-Athlete GPA 2011-12 vs Athlete GPA 2011-12

	N	M	SD	SEM
Non-Athlete GPA 2011-12	270	3.061	0.885	0.054
Athlete GPA 2011-12	85	3.618	0.777	0.084

Difference = μ (Non-Athlete GPA 2011-12) - μ (Athlete GPA 2011-12)

Estimate for difference: -0.557

95% CI for difference: (-0.755, -0.360)

t-Test of difference = 0 (vs not =): *t*-Value = -5.57 *p*-Value = 0.000 *DF* = 158

Curriculum Vitae

Jack W Calhoun III, M. Ed.
 1000 Addington Court
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 (843) 655-8108
jack.calhoun@waldenu.edu

Education:

Doctor of Education in Teacher Leadership Walden University, Minneapolis, Minnesota	Expected 2014
Master of Education: Health and Physical Education Georgia Southwestern State University, Americus, Georgia	1998
Bachelor of Science in Education: Health and Physical Education Georgia Southwestern State University, Americus, Georgia	1997
Associate of Science Darton College, Albany, Georgia	1995

Occupation:

Teacher/Coach Horry County Schools in Conway, South Carolina Physical Education teacher at Pee Dee Elementary School for 2008-2009 school year. Teacher of various classes at Socastee High School from 2009 school year to present. Football coach at Socastee High School from 2008 school year to present. Track & Field coach in 2014 season.	2008-present
Teacher/Coach Wilkes County Schools in Washington, Georgia Health and Physical Education Teacher at Washington-Wilkes Comprehensive High School. Taught freshmen state mandated classes for graduation. Football coach at WWCHS. Head girls' basketball coach at WWCHS.	2005-2008
Teacher/Coach/Facilitator Pelham City Schools in Pelham, Georgia Teacher of Science, Health, and Physical Education classes at Pelham City Middle School. Facilitator as in-School Suspension Coordinator for grades 6-12. Football coach at Pelham High School. Head girls' basketball coach at Pelham High School.	2003-2005

- Teacher/Coach 2002-2003
 Dooly County Schools in Vienna, Georgia
 Teacher at Vienna Elementary School. Football coach at Dooly County High School.
 Head girls' tennis coach at DCHS. Head boys' tennis coach at DCHS.
- Teacher/Coach 2001-2002
 Pelham City Schools in Pelham, Georgia
 Science Teacher at Pelham High School. Taught physical science, anatomy, and remedial
 science classes. Head football coach at Pelham City Middle School. Girls' basketball
 coach at Pelham High School.
- Teacher/Coach 2000-2001
 Dade County Schools in Trenton, Georgia
 Physical Education teacher at Dade County Primary School (pre-kindergarten to 2nd
 grade) and Dade County Elementary School (grades 3-5). Football coach and head boys'
 basketball coach at Dade County Middle School. Head girls' tennis coach at Dade
 County High School.
- Teacher/Coach 1999-2000
 Pulaski County Schools, Hawkinsville, Georgia
 Physical Education teacher at Hawkinsville High School. Football coach and head boys'
 basketball coach at Pulaski County Middle School. Head girls' tennis coach at
 Hawkinsville High School. Head boys' tennis coach at Hawkinsville High School.
- Multiple Positions 1995-1999
 Georgia Southwestern State University in Americus, Georgia
 Interim Intramural Director from August of 1998 through June of 1999. Graduate
 Assistant instructor of multiple Activities' Classes during 1997-1998 school year. Men's
 basketball assistant coach during 1997-1999 seasons. Head men's cross country coach
 during 1997-98 season. Head women's cross country coach during 1997-98 season.
 Men's basketball student assistant coach during 1995-97 seasons.
- Infantryman 1989-1993
 United States Marine Corps
 Served 4 years of Active Duty in the USMC. Stationed primarily at Camp Pendleton,
 California. Toured over 30 ports of call worldwide. Section and Squad Leader as well as
 Platoon Scribe. Trained as a Rifleman, Mortar Man, and SMAW Gunner. Taught
 weaponry classes to foreign military units and Navy and Marine Corps officer candidates.

Awards:

2013 Region Football Champion

2012 Region Football Champion
 2006 Assistant Football Coaching Staff of the Year
 2006 Region Football Champion
 Coached 2005 Football State Defensive Player of the Year
 2005 Football State Runner Up
 2002 Football State Runner Up
 2001 Football Region Champion
 1997 Basketball Conference Champion
 1998 Basketball Conference Champion
 1999 Basketball Conference Champion
 Southwest Asia Service Medal (3 stars)
 National Defense Service Medal
 Kuwait Liberation Medal
 Good Conduct Medal
 Sea Service Deployment Ribbon (1 star)
 Meritorious Mast (2nd Award)
 Navy Unit Commendation (13th MEU SOC 900801-910430)

Competencies & Interests:

Coaching Competitive Sports-Football, Basketball, Tennis, Track & Field, Cross Country
 4 High School Football Region Championships
 15 High School Football Playoff Wins
 2 State Runner Up Finishes
 Coached 2005 Football State Defensive Player of the Year
 Coached 2003 Football State Offensive Player of the Year
 2 Basketball State Qualifiers
 3 College Basketball National Qualifiers
 3 College Basketball Conference Championships
 5 Tennis State Qualifiers
 2 Track & Field State Qualifiers
 Rifle Expert Badge
 Pistol Sharpshooter Badge