ATHLETIC EXTRACURRICULAR ACTIVITIES AND ACADEMICS: AN ANALYSIS OF STUDENTS FROM LOW SES FAMILIES AND THEIR ECA PARTICIPATION

A DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE

DOCTOR OF EDUCATION

BY

MICHAEL R. PEO

DISSERTATION ADVISOR: DR. MARILYNN QUICK

BALL STATE UNIVERSITY

MUNCIE, INDIANA

JULY 2024

SIGNATURE PAGE

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ABSTRACT

DISSERTATION: ATHLETIC EXTRACURRICULAR ACTIVITIES AND ACADEMICS: AN ANALYSIS OF STUDENTS FROM LOW SES FAMILIES AND THEIR ECA PARTICIPATION

STUDENT: MICHAEL RAY PEO

DEGREE: DOCTOR OF EDUCATION

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The primary focus of this mixed-method research was to examine the relationship between athletic-based extracurricular participation (ECAs) and academic outcomes for students from low SES backgrounds. The research was based on academic results and student interviews from two Central Indiana High Schools. An analysis of student's grade point (GPA) averages for three semesters post-COVID-19 allowed the GPA data to be collected when schools no longer had to enforce COVID-19 protocols. The analysis showed a modest, yet statistically significant, correlation between participation in ECAs and GPA. However, qualitative research uncovered that non-cognitive skills could be a reason for improved academic outcomes. Student interviews highlighted that ECA participation enhanced their non-cognitive skills, which could be a reason for improved academic outcomes. The themes that emerged from the student interviews included: employability skills, positive relationships, and academic enhancement.

DEDICATION

To my family who mean more to me than anything in the world.

With your love and support I can accomplish anything.

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CHAPTER ONE: INTRODUCTION

American schools are experiencing increased pressures under the high stakes testing and accountability era ushered in by No Child Left Behind in 2001, which has intensified with the passing of the Every Student Succeeds Act in 2015. Schools are challenged to provide students with an education that will allow them to be productive community members and support a thriving economy. Yet, an achievement gap makes it difficult for some students to obtain a basic education. According to Jones and Ramchand (2014), “There are two major gaps in educational enrollment and educational attainment between males and females and between socio-economic groups” (p. 953). The gap between males and females has been somewhat addressed (Jones & Ramchand, 2014). However, there is continued concern over the achievement gap between students from families of high Socio-Economic Status (SES) and low SES. This gap is proving more problematic as it is still wide today (Akmal & Pritchett, 2021; Hanushek et al., 2019; Jones & Ramchand, 2014).

School leaders consistently seek ways to improve students’ academic outcomes to prepare them for post-secondary pursuits. Many researchers (Covay & Carbonaro, 2010; Gardner, Roth & Brooks-Gunn. 2008; Mahoney, Harris & Eccles, 2006; Morris, D., 2016) claim that a student’s participation in athletics could lead to improved academic outcomes for students from low SES families. Because school leaders are so focused on their students’ academic outcomes, there has also been an interest in how the development of students’ non-cognitive skills can lead to improved achievement. In other words, one of my assumptions is that school leaders might address this SES achievement gap through extracurricular participation, which could improve academic outcomes as well as non-cognitive skills development for students categorized as low SES.

Problem Statement

How can we better support students from low SES backgrounds to become more successful in school academics and the known problem that low SES is associated with low student achievement (Armor et al., 2018)? Poor student achievement often leads to higher absenteeism for students, a higher dropout rate, and lower earnings as adults (Hall, Liang, & Riley, 2021).

The consensus among most researchers (Akmal & Pritchett, 2021; Hanushek et al., 2019) is that most students' participation in athletic ECAs results in a positive benefit toward academic achievement. However, a limited amount of research includes students from low-SES families. This study aimed to understand if there was a relationship between participation in extracurricular activities by students from low SES families and increased academic achievement.

Some research suggests that students who participate in extracurricular activities will realize increased mathematics performance (Morris, D., 2016). Improving math performance alone is an excellent sign that extracurricular activities are beneficial to a school. Yet, there is still concern that the benefits of extracurricular activities only provide a short-term boost. Many researchers who have analyzed longitudinal data report that extracurricular participation has a long-term positive impact on grades and test scores (Broh, 2002; Fejgin, 1994; Hanson & Kraus, 1998, 1999). However, other research from early longitudinal studies reported that participation in extracurricular activities does not impact academic achievement (Melnick et al., 1988; Melnick et al., 1992; Sabo et al., 1993). The research from the late 1980s and early 1990s analyzed the High School and Beyond study data and provided some debate on whether ECAs led to improved achievement or not. More recent data indicate that participation in extracurricular activities positively impacts academic achievement (Broh, 2002).

Recently, more evidence has concluded that there are short-term and long-term advantages for students who participate in extracurricular activities during their high school years. Even though there is research to support this claim, researchers have not agreed upon conclusive reasons that explain these benefits. I planned to examine in more depth students' involvement in ECAs and academic outcomes. In particular, my research focused upon students from low SES families, who represent a gap in the current research studies.

Background

After examining past research, there are many reasons for the achievement gap between low-SES and high-SES families. Non-cognitive skills are one area that sets the two students' groups apart (Evans & Rosenbaum, 2008; West et al., 2016). According to Liu, 2019, "differences in children's non-cognitive skills or socioemotional skills such as motivation, self-control, aspiration and other social psychological traits displayed in attitudes and behaviors contribute to achievement inequality" (p. 1). How can we improve students' non-cognitive skills, such as motivation and grit, to improve academic achievement?

With educational funding limited (Holland & Andre, 1987, Sekhri & Sandhu, 2017), schools need to find the most efficient programs that positively impact student outcomes. The benefits of extracurricular athletic activities can play a vital role in helping students improve academic outcomes and justify their financial investment. The benefits athletes receive are also true for students who participate in non-athletic-based ECAs. Many researchers have shown that schools have invested in extracurricular activities (ECA) as well as athletic ECAs and expect their students to benefit from their participation to achieve a more balanced education (Bartkus et al., 2012; Holland & Andre, 1987; Seow & Pan, 2014; Shulruf, 2012). Many researchers have come to a common stance that ECA involvement is positive for students regarding development and academic achievement (Davalos et al., 1999; Mahoney, 2006; McNeal, 1995; Neely & Vaquera, 2017; Peguero et al., 2015). Yet there are not always opportunities for students to participate in athletic ECAs. Schools can only offer a certain number of opportunities, which will likely not provide sufficient opportunities for all. For example, many sports have cuts due to limited roster space, such as volleyball, basketball, baseball, and softball. This could be another barrier that prevents students from low-SES families from being able to participate. According to Post et al., 2018, "…up to 70% of children drop out of youth sports; one reason is due to a trend of year-round highly specialized sport participation" (p. 126). Some of the year-long club sports are pay-to-play and not subsidized; therefore, such practices prevent students from low-SES from participating (Post et al., 2018). Because of factors like this, ECAs play a crucial role but it is imperative that students from low-SES families have similar access to more affluent families.

Theoretical Framework

The theory that framed this study was the Bar-On Model of Emotional Intelligence. It was developed by Reuven Bar-On (Bar-On, 2006) to study leadership practices, school children, and well-being. Reuven Bar-On describes emotional intelligence (EI) as an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures (Bar-On, 2006). This theory indicates that social and emotional functioning components lead to better well-being and greater student success. As applied to my study, this theory holds that I expect my independent variable(s) of participation and non-participation in athletic ECAs, and SES to influence or explain the dependent variable, which is GPA. I assumed that participating in athletic ECAs will increase a student's GPA compared to their matched student who does not participate in athletic ECAs. Additionally, I analyzed non-cognitive factors, including interpersonal skills, adaptability, motivation, and grit, by gaining student perceptions during interviews.

Purpose of the Study

The primary purpose of this mixed-method study was to compare the relationship between the academic outcomes of low socioeconomic status (SES) students who participate in extracurricular athletic activities (ECAs) to those who do not. To address this relationship during Phase One, I collected data from PowerSchool to provide the necessary information on the following independent variables: participation or nonparticipation in athletic ECAs, gender, and SES status (free vs. reduced). Grade point average (GPA) data represented the dependent variable I examined. A second purpose was to compare the differences between the control group (low SES students who do not participate in athletic ECAs) and the comparison group (low SES students who participate in athletic ECAs). Based on the quantitative research phase that was conducted, I had two predictions for the data analysis results. My first prediction was that the comparison group of students from low SES families who participated in athletic ECAs would have higher GPAs than the control group, and secondly there would be a relationship between GPAs and athletic ECA participation. The last purpose of this study was addressed during Phase Two. I used a qualitative design as I interviewed students from low SES families who participated in athletic ECA's. These interviews provided a more in-depth understanding of students' growth in non-cognitive skill areas (relationships, work ethic, self-esteem/self-confidence, engagement, and grit) through their lived experiences.

Research Questions

Based on past research literature and the purposes of this study, I addressed these research questions:

1. What relationship exists between the GPA averages of all students who participate in athletic-based ECAs compared to all students who do not participate in athletic-based ECAs?
2. What are the differences in GPA between the control group (Low SES students who do not participate in athletic ECAs) and the comparison group (Low SES students who participate in athletic ECAs)?
3. Based on student perceptions, how does participating in athletic-based ECA's change low SES students' non-cognitive skills, such as grit/self-discipline, self-esteem, engagement, and work ethic?

Significance of the Study

This study aimed to understand if there was a relationship between participation in extracurricular activities by students from low SES families and academic achievement. There is limited research that explicitly studies extracurricular participation and academic achievement for students from low SES families. The main reason for using a mixed-method study is to collect student data in more than one manner. Past research relied on survey results from participants. Many researchers must exclude survey results from students from low-SES families due to missing data (Haghighat & Knifsend, 2018). Using a mixed-method approach, I can target a specific group of students and obtain rich data through interviews.

My research can add to the current literature by focusing solely on athletic ECAs, rather than all ECAs. By eliminating ECAs based on fine arts, student government, academic teams, etc., I can better understand just athletic ECAs. Most students who participate on academic teams will be strong students regardless of their participation on the team (Chambers & Schreiber, 2004). According to the U.S. Census Bureau (USCB), 57% of children between 7 and 17 participate in at least one athletic extracurricular activity, with 35% participating in other extracurricular activities (Shaffer, 2019; USCB, 2017). That was one reason I wanted to investigate athletic ECA participation and its impact on students' academic outcomes, especially students from low-SES families. According to Shaffer, 2019, “benefits of all ECAs include instilling a sense of pride in the school and community, teaching lifelong lessons, and skills of teamwork and self-discipline” (p.9). These skills often lead to a higher GPA, attendance, and graduation rates. (Shaffer, 2019). Finally, if the research shows a positive relationship between athletic ECA participation and academic outcomes for students from low-SES families, it can support the expansion of the benefits of ECAs. Such research could encourage local school boards to dedicate more resources to athletic ECAs. Financial resources can eliminate pay-to-play policies and provide additional opportunities for students to be engaged in ECAs. School boards can also establish community partners to create ways to eliminate other barriers (for example, transportation, childcare, study tables, etc.) that prevent students from participating in athletic ECAs.

Delimitations

Some of the delimitations include the sample size. I anticipated a sample size of 993 low SES students (745 Free Lunch, 184 reduced) from a population of 2,534students in the two high school being studied. After removing students who were missing one or more variable, the total sample was 709. Only focusing on lower SES students who participate in athletic ECAs compared to those that do not made the study narrower. However, that was a sufficient *n* to conduct the research. The only independent variable that was different is participation in athletic

ECAs. This provided me with comparable data and determined if there was a relationship between athletic ECA participation and academic outcomes.

Another delimitation was focusing on Athletic ECAs rather than all ECAs. Schools offer many ECAs; however, by concentrating on athletics, I studied the ECAs category in which 7.8 million students participate school-based athletics throughout the United States each year (Post et al., 2018). Finally, there were many independent variables that could be considered. Including only gender and SES covered some of the possibilities. If the study were larger, I could disaggregate, for example, by grade level, ethnicity, or sports that implement study tables. Focusing on my current variables limited the study's scope yet provided important variables that are the focus in many other studies.

The last delimitation for the quantitative portion of my study was that athletes must maintain a minimum academic level to remain eligible to participate. Currently, in Indiana if a school wants to compete in state ran tournaments, they must abide by the Indiana High School Alethic Association rules. Their academic minimum is that a student athlete must pass 5 out of seven classes every nine weeks. If a student were to earn five D- grades and two F's (lowest possible academic outcome to remain eligible) the simple GPA comes out to .543. This will vary some school to school based on the weighting of course. This does not establish a high floor, but a GPA floor does impact students GPA.

For the qualitative aspect of this research, I included even fewer students to allow more depth of investigation. When a study focuses on 10 or fewer students, the researcher could be missing potential students from which they can collect more data. The data from qualitative research are not generalizable, but the benefits include richer data.

Summary

It is not a secret that there is an achievement gap between students from different SES statuses. Students at lower SES levels have more obstacles to overcome than wealthier students. To combat this gap, schools need to utilize their resources to support student success, and athletic ECAs are an option that seems to positively impact academic outcomes. Yet some barriers prevent students from low SES families from participating, such as fees required to play, family obligations, and transportation. Past research has tried to examine the relationship between ECA participation and academic achievement; however, due to limited low-SES student participation, there is insufficient research focused solely on low-SES students. My study examined the relationship between athletic ECA participation and academic outcomes and delved into low SES students' perceptions of the non-cognitive skills that may be improved through athletic ECA participation.

Organization of the Study

In Chapter Two of this dissertation, I provide an in-depth overview of the relevant literature from past research. The third chapter outlines the methods I used to collect and analyze my data with details about my research design. Chapter Four reports my findings. Finally, in Chapter Five, I discuss the conclusions and implications of my findings.

CHAPTER TWO: LITERATURE REVIEW

Almost every high school in the United States is known for its academic reputation and its success in athletic extracurricular activities (ECA). While it is intuitive that every school should be focused on academics, why are extracurricular activities so important? Often times schools are known for the success of their athletic teams. However, if you do that, you are missing out on the importance of extracurricular activities. Extracurricular activities can play an essential role in helping students improve their academic outcomes (Broh, 2002; Eccles & Barber, 1999; Eder & Kiney, 1995; Fredericks & Eccles, 2006; Neely & Vaquera, 2017; Rathore et al., 2018).

A broad literature search was conducted on ECAs and academic achievement using several databases, including One Search, ERIC, JSTOR, and Google Scholar. I used keywords and phrases such as “extracurricular activities,” “academic achievement,” and “ECA participation.” After reviewing relevant research studies over the past 10 years, and a few older studies, especially the work of Holland and Andre, McNeal, and Broh (Broh, 2002; Holland & Andre, 1987; McNeal, 1995) the effects of ECAs are still debated. These research studies provided a background for current research. I examined over 50 studies on extracurricular activities and academic achievement. The focus of the articles used was primarily on high school students who participated in extracurricular activities. I categorized the research articles by their theoretical frameworks and type of study. Doing this allowed me to identify central themes that have been examined and what future topics still need to be explored.

Schools are continually exploring strategies to enhance students' academic achievements, aiming to better prepare them for post-secondary endeavors. Students can move to higher education institutions, the job force, or other opportunities. For some students, schools prepare students with an excellent foundation, while other students struggle to reach minimum proficiency levels. For this reason, some schools are investing money into programs that will enhance students' academic outcomes.

With educational funding limited (Holland and Andre, 1987; Sekhri & Sandhu, 2017), schools need to find the most efficient program that positively impacts student outcomes. The benefits of ECAs can play a vital role in students' improved academic outcomes and justify their financial investment. Many researchers have shown that schools have invested in ECAs and expect their students to benefit from their participation to achieve a more balanced education (Bartkus et al., 2012; Holland & Andre, 1987; Seow & Pan, 2014; Shulruf, 2012). If resources are limited, and the school's goal is to improve academic outcomes, why do they invest so much in extracurricular activities? Many researchers have come to a common stance that ECA involvement is positive for students regarding development and academic achievement. (Davalos et al, 1999; Mahoney, 2006; McNeal, 1995; Neely & Vaquera, 2016 & Peguero et al.). The overall purpose of this study is to examine athletic ECA participation and its relationship to academic outcomes such as Grade Point Average (GPA) for students from lower-income and socioeconomic statuses (SES).

Literature Review

This literature review summarizes recent research and examines the current gaps related to studying the benefits of extracurricular participation and academic achievement for students from low-SES families. The review begins with a discussion of the theoretical framework for my research, which is Emotional Intelligence using the Bar-On model (Bar-On, 2006). Additionally, it examines the potential benefits extracurricular activities can provide to students and how ECA participation correlates to academic achievement. The literature review will also discuss the overall benefits of extracurricular participation and academic achievement and its impact on non-cognitive skills. The focus will shift to the limitations of past research.

Theoretical Framework

The theory framing this study will be the Bar-On Model of Emotional Intelligence. It was developed by Reuven Bar-On (Bar-On, 2006) to study leadership practices, school children, and well-being. Ain et al., (2021) pointed out that, “the Bar-On model is more inclined towards a mixture of Emotional Intelligence.” (p. 2). This theory indicates that components of social and emotional functioning lead to better well-being and greater success for students. Dhani and Sharma, (2016) state, “all learning has an emotional base” (p. 189). If all learning has an emotional base, then according to Kewalramani et al. (2015), “a scientific understanding of EI allows us to train our emotional skills so that we can live more fulfilling and productive lives” (p.178). Academic success can be one of the areas that benefit from improved emotional intelligence. While EI alone will not change a person’s ability, rather it could possibly have an impact on a person’s traits that can lead to improved academic success. Barr-On, (1997), characterizes EI as an array of non-cognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures. (Bar-On, 1997)

As applied to my study, this theory holds that I would expect my independent variable(s) of participation and non-participation in athletic ECAs, age, grade level, gender, and SES to influence or explain the dependent variable(s), which is GPA. My assumption is that participating in athletic ECAs will increase a student’s GPA compared to their matched student who does not participate in athletic ECAs. Additionally, I measured non-cognitive factors, which include interpersonal skills, adaptability, motivation, and grit. This connects with what Dhani and Sharma, (2016) state, “Reuven Bar-On conceptualized a model with personality dimensions, emphasizing the co-dependence of the ability aspects of emotional intelligence with personality traits and their application to well-being" (p. 193).

Other models and research regarding emotional intelligence supplement Bar-On's work. According to Dhani and Sharma, (2016), "emotional intelligence is the simplest words to refer to the ability to recognize and regulate emotions in ourselves and others, to make effective decisions" (p, 189). There are three leading models of Emotional intelligence. Ain et al., (2021) state, "Goleman's breakdown of emotional intelligence, Mayor-Salovey's ability-based model and lastly, Bar-On's model" (p. 2). Of these three models, they can be further broken down as stated by Dhani and Sharma, (2016), "each theoretical framework conceptualize EI from one of two perspectives: as a form of pure intelligence consisting of mental ability only, or as a mixed intelligence consisting of both mental ability and personality characteristic like optimism, adaptability, and well-being" (p. 193).

Other models of EI warrant a summary to provide additional background. Another view on EI is from Mayer and Salovey, (1997), "emotional intelligence (EI) involves the ability to monitor one's own and other's feelings and emotions, to discriminate among them, and use this information to guide one's thinking and actions" (p. 189). As a student performs in athletic ECAs, there is potential to positively influence social skills that lead to improved academic outcomes (Di Fabio & Saklofske, 2014). Finally, the perspective on EI is given by Sekhri and Sandhu, (2017), "emotional intelligence is emerging as a crucial factor in order to sustain high achievement, retain positive behavior as well as improving life success" (p. 291). For example, Di Fabio & Saklofske, (2014) state, "emotional intelligence encompasses domains such as interpersonal and intrapersonal competencies, stress management, adaptability, and general mood" (p. 2).

Meyer and Fletcher, (2007) explained that “athletes are faced with stressors on and off the field which are linked to their athletic performance as well as their overall health and well-being” (p. 7). There are many ways student athletes can manage their stress, however making sure they do so in a positive manner is imperative. According to Meyer and Fletcher, (2007), “recent literature has identified EI as one factor that may mediate the relationship between stress and health. If student athletes can pay attention to moods, clarity in perceiving mood, and confidence in one’s ability to repair negative mood are critical for adaptive psychophysiological coping and subsequent well-being (Meyer & Fletcher, 2007).

Broh (2002) argued that there are three ways that ECA participation indirectly boosts a student’s academic performance. First it helps develop life skills and characteristics such as strong work ethic, self-esteem, perseverance, and locus of control which are consistent with positive academic outcomes. Second, ECA increases social status and accords membership into the leading crown of academically oriented peer groups. Facilitating a higher academic performance. Finally, ECAs provide students with greater interaction with fellow students and the school, thereby building social capital and encouraging students to follow school norms and, thus, academic success. (Broh, 2002) Based on the previous work on emotional intelligence and athletic ECA participation, there might be a connection the Bar-On model of EI might be the theory to make frame the connection.

Definition of Extracurricular Activities

There are many ways to define extracurricular activities, and researchers have developed different definitions. For example, some researchers explain extracurricular activities as any activity organized and supported by the school and students participating at the school itself. (Feldman & Matjasko, 2005). Other research explains extracurricular activities as any activity outside of the core curriculum that is not tied to a student's grade point average (Seow & Pan, 2014). The goal is to eliminate any activities that are considered co-curricular such as band, choir, theatre, or any activity which earns students a grade. Instead, I relied on the definition provided by Bartkus et al. (2012), who defined extracurricular activities as” academic or non-academic activities that are conducted under the auspices of the school but occur outside of regular classroom time and are not part of the curriculum” (p. 698).

Besides defining extracurricular activities, I also need to identify what participation means. For this study, participation is considered to be High School students who engage in athletic-based extracurricular activities (Feldman & Matjasko, 2005). I reviewed current research claims about students from low-SES families with a shared understanding of what participation in extracurricular activities is.

Academic achievement is also a broad term and can mean many different things. It can be measured in classroom grades through a comparison of a student’s GPA. Other ways to measure academic achievement can be dropout rates, attendance, and graduation. These are all measures that can be compared from student to student regardless of where they went to school. For this research, I included GPA and non-cognitive skills. The aim was to examine the relationship athletic ECA participation has on academic outcomes for students from low SES families.

ECA Benefits

Why are extracurricular activities important? Many researchers, through empirical research, agree that participation in extracurricular activities is a positive for students' academic achievements (Covay & Carbonaro, 2010; Gardner et al., 2008; Mahoney, Harris & Eccles, 2006; Morris, D., 2016). With the results of extensive studies, there is a benefit to participating in athletic-based ECAs other than just competing against other schools.

Predicting the specific benefits an individual student will receive from extracurricular participation is still difficult to pinpoint; however, their many benefits have been identified in general (Snellman et al., 2014). The biggest question remains: how does participation in extracurricular activities impact academic achievement for students from low SES families? Most of the past research has been based on middle and upper-class students. My goal is to determine if all students gain the same benefits from participation in extracurricular activities. Do students from lower SES families gain more benefits than the middle and upper classes? Due to limited research focusing on low SES students and extracurricular participation, there is a gap in the research literature.

Reviewing previous studies reveals a positive correlation between extracurricular involvement and students' academic performance, indicating certain advantages. Some research suggests that if a student spends time participating in extracurricular activities, their mathematics performance should increase (Morris, D., 2016). Improving math performance alone is an excellent sign that extracurricular activities are essential to a school.

Yet, there is still concern that the benefits of extracurriculars only provide a short-term boost. Numerous scholars analyzing longitudinal data have found that involvement in extracurricular activities yields long-term benefits for grades and test scores (Broh, 2002; Fejgin, 1994; Hanson & Kraus, 1998, 1999). Other research from early longitudinal studies reports that, with a few exceptions, participation in extracurricular activities does not have any impact on academic achievement (Melnick, Sabo & VanFossen 1992; Melnick, VanFossen & Sabo, 1988; Sabo et al., 1993). The research from the late 1980s and early 1990s drew data from the High

School and Beyond study. More recent data indicate that participation in extracurricular activities has a positive impact on academic achievement (Broh, 2002). It has been determined that there are short-term and long-term advantages for students who participate in extracurricular activities during their high school years. Even though there is research to back up the claim that extracurricular activities provide an educational benefit to students who participate, the question remains “why?” Some researchers report that extracurricular activities promote relationships similar to those possible in classrooms; therefore, ECAs can additionally improve social relationships (Morris, D., 2016). Success in the classroom and ECAs requires a student to interact with an authority figure, leading to enhanced social capital (Morris, D., 2016). These interactions could be an area where students from low SES families can improve their emotional intelligence and lead to improved non-cognitive skills.

While there might be benefits to student participation in extracurricular activities, how can these be measured? Can the benefits of successfully interacting with adults and improving math achievement be measured? Current research indicates improvements in math, students’ grades, and test results from ECA participation, but does it improve reading achievement? The conversation seems to be focused on the benefits a student gains from participation in extracurricular activities that create skills that transfer to academic achievement. Some research argues that extracurricular participation leads to improved soft skills such as time management and networking, leading to improved academic achievement (Haghighat & Knifsend, 2018).

Other researchers argue that it is not soft skills but an improved attitude towards school through extracurricular participation that leads to academic success (Morris, D., 2016). If students are involved in school and around other peers that make academics a priority, it can improve their attitude toward school and result in positive academic achievement. An improved attitude towards school could be more valuable for students from low SES families if their homes do not emphasize education. Once again, if low-SES students can expand their social networks, they can gain more social capital, which can improve their academic achievements, future education, and career success (An & Western, 2019).

Socioeconomic Status SES

One of the main focuses of this literature review is to examine the relationship between extracurricular participation and student achievement, especially for students from low SES families. Many researchers state the income gap is more significant today than in the past, and that gap is a reason for the achievement gap for students from low-SES families (Duncan, 2011; Snellman et al., 2015). The rich are getting richer, and the poor are getting poorer. It is true today and is creating barriers some students cannot overcome (Gibson-Davis & Percheski, 2018). These barriers need to be addressed quickly as the potential lack of access to extracurricular activities can negatively impact their adult success as well (Long, 2020). Students from low-SES families often lack the essential skills that put them behind in academic skills before they enter school (Covay & Carbonaro, 2010; Marchetti et al., 2016; Morris, E. 2019). Low SES students usually do not attend preschool or, if they do, participate in lower-quality ones. This requires schools to address achievement gaps due to SES from the start of a student's formal education. Schools with a large population of students from low SES families are receiving extra financial support to launch programs to aid these students. Programs like Title I allow schools to hire additional support and create interventions to improve lacking educational skills and close the achievement gap. Each school can run its Title I program in a manner the personnel believe is best for its student population. If schools are hoping to close this gap, school leaders need to find as many ways as possible to support students from low-SES families.

An additional approach to helping close the achievement gap for students from low-SES families is to increase student participation in extracurricular activities. Currently, students from low SES families are underrepresented in participation in extracurricular activities (Covay & Carbonaro, 2010). Lack of participation can be due to required participation costs, family situation, need to work after school, being assigned to watch siblings, etc. If schools can get more students from low SES families involved in extracurricular activities, benefits such as improved students' non-cognitive skills and academic achievement might be realized.

According to the Kentucky Department of Education, 2018, “achievement gaps are observed when the academic performance of a given student group is substantially lower than other matched student groups” (p.3). Even though many researchers agree there is an achievement gap, most of the studies have limited data for students from low-SES families (Rathore et al., 2018; Shulruf, 2010). Most of the studies suggest that they do not get their surveys back or have a low amount returned from this student group. Of the ones sent back, many are incomplete and must be omitted, and as a result, their information is thrown out (Broh, 2002; Haghighat & Knifsend, 2018). The lack of usable data is one of the key reasons there needs to be additional research on the impact of extracurricular activity participation and its relationship to academic achievement for students from low SES families. Regardless of the data, students from low SES are still struggling.

During the early 2000s, there was a reduction in educational spending in many states. As a result, many schools were forced to cut funding for extracurricular activities giving birth to the pay-to-play model. In this model, students must pay a hefty fee to offset transportation and other expenses the school pays for the different extracurricular activities. Schools do not need to create another barrier for students from low-SES families to overcome. Students from middle-class and wealthy families were still able to participate in Extracurricular activities, while low-SES students could not afford the fees to play (Snellman et al., 2015). The issue is segregation in extracurricular activities not by race but by wealth. Students from low-SES families not being able to participate in extracurricular activities prevent them from gaining the potential benefits to improve their academic achievement. The difference in educational achievement between children from low-income families and that of children from wealthy families has grown substantially (Snellman et al., 2015). This is one of the many reasons students from low-SES families need to be involved in extracurricular activities.

Schools need to stop thinking that extracurricular activities are optional; instead, education must realize that ECAs can improve their students' education (Lang, 2021). Most of the research points out that extracurricular participation is positively related to academic achievement. The aim should not be what extracurricular activities to provide but how to get as many students to participate. This leads to the need for more research to show the academic achievement benefits students from low-SES families can gain. If the data can provide support for the benefit, then schools and communities can work together to improve the participation of students from low-SES families in extracurricular activities.

Gender Differences

Another concern for schools is the academic gap between male and female students. Research by Reardon et al., (2019) "on average male and female students score similarly on math tests, but that females outperform males on reading or English Language arts" (p. 2475). Students at the bottom of the gap have progressed in reading and math, minimal progress has been made toward closing achievement gaps. (Barnett, 2007, and Chambers & Schreiber, 2004). According to Di Fabio and Saklofske, (2014), Bar-On states that little evidence exists that could further advance our understanding of gender differences in overall emotional intelligence, however, males and females show distinct differences in EI sub-components; females have a relatively strong domain of interpersonal skills, empathy, and emotional self-awareness. Whereas men are more adept at managing emotions, adapting to frivolous situations, and more enhanced and strengthened concepts of self-regard, self-reliance, conflict-handling, coping skills, and optimism (p. 2).

Some students achieve more than others. When researchers compare male and female students who participate in extracurricular activities, there is a difference in the benefits. Male students appear to earn higher grades in school than students who do not participate in ECAs (Holland and Andre, 1987). Making higher grades could be due to the benefits of improved non-cognitive skills. Early results showed that boys saw improvements in their academic achievement when they participated in extracurricular activities, but girls did not (Holland & Andre, 1987). Later research by Balaguer et al. (2020) reported that "the impact of ECAs on positive development is higher for boys" (p.2).

One possible reason for the difference in the relationship between boys and girls in ECA participation is that overall, the time spent participating in activities differed for girls and boys. Girls tended to spend less time involved in athletic extracurricular activities (Balaguer et al., 2020; Chambers & Schreiber, 2004). Other research into this topic indicated it depends on the types of activities girls were involved in. For example, if they were a part of a team, they did gain benefits academically; the catch is that participants needed to be inclusive. If the team did not include everyone, it could have a different impact on girls' academic achievements. If a sport has tryouts for participation and a girl makes the team, she got a boost in confidence and saw improvements in academic achievement (Barnett, 2007).

However, if a girl does not make the team, this has a negative impact on her self-confidence/self-esteem. It negatively impacts girls' academic achievements, especially classroom performance, for at least two months (Barnett, 2007). Every student can benefit from enhanced non-cognitive skills gained from participation in extracurricular activities. The research needs to continue to explore the topic and break down the data by ethnicity and SES. Currently, there is not enough data for some subgroups to determine the actual impact if any.

Non-Cognitive Skills

There are many ways a student can improve their academics, such as studying more, getting a tutor, etc. However, my research is based on experiences that can improve a student's academic outcomes. Will participating in athletic-based ECAs make your math and ELA scores jump instantly? The answer is not simple; athletic-based ECAs can improve a student's non-cognitive skills, leading to improved academic achievements. It is up to schools to provide opportunities for students to be involved in facilitating the learning of non-cognitive skills that can translate into academic success (Holland & Andre, 1987). The more opportunities the school provides, the more likely that students will hopefully pique their interest and get them to participate in extracurricular activities (Covay & Carbonaro, 2010).

To better understand the benefits of participation in extracurricular activities, I need to be clear about what non-cognitive skills mean. West et al. (2016) describes,

> Non-cognitive has become a catchall term for traits or skills not captured by cognitive ability and knowledge assessments. Recent discussions of non-cognitive skills have emphasized the importance of characteristics such as conscientiousness, self-control, and grit that appear to contribute to students' ability to sustain effort at academically demanding tasks (p. 149).

This served as my definition of non-cognitive skills for this study. I examined the various non-cognitive skills that a student might gain through their participation in extracurricular activities.

Non-cognitive skills from extracurricular participation, such as engagement, higher educational aspirations, social benefits, and self-esteem, are linked to a positive influence on academic achievement (Broh, 2002; Eccles & Barber, 1999; Eder & Kiney, 1995; Fredericks & Eccles, 2006; Neely & Vaquera, 2017; Rathore et al., 2018). These non-cognitive skills can be linked to improved soft skills and social capital that explain students' benefits from participating in extracurricular activities (Broh, 2002; Neely & Vaquera, 2017).

Improved attitudes towards school and academic achievement seem to be a few reasons for improved academic achievement for student participation in extracurricular activities. However, the research still does not address why extracurricular participation leads to benefits and who exactly benefits (Morris, D., 2016). That is, the goal is to determine who benefits and why. Non-Cognitive skills seem to hold the key to participation in extracurricular activities and academic achievement (Bradley & Conway, 2016).

While most of these skills are being acquired in the classroom, extracurricular activities enhance the same skills and more in an activity the student chooses to participate in. If a person decides to be a part of it, they have a more substantial interest and are likely to work harder. This is one aspect of extracurricular activities that differs from the classroom. Often in a high school setting, students must take the classes they need to earn their diploma. While some of these classes might be enjoyed by the student, many required courses would not be chosen by most students who would rather take classes that interest them. If a student takes classes all day that they do not particularly like and are not involved in any other aspects of school, there is little incentive to perform well other than you are expected to.

Since students from low SES families are underrepresented in extracurricular activities, it is not surprising that they do not perform well in school. Extracurricular activities can keep students' attention and indirectly improve non-cognitive skills and academic achievements (García, 2016). Therefore, more research is needed to determine how students from low-SES families can engage in the educational environment and improve academic achievement.

Self-esteem/Self-Confidence

One non-cognitive skill that has been shown to improve students’ academic achievement is self-esteem. Self-esteem is a person’s sense of worth, according to them (Griffiths et al., 2021; Holland & Andre, 1987). It is believed that if students feel better about themselves, their self-confidence will rise and positively impact their academic achievement. If a student participates in a competitive extracurricular and is successful, it can lead to improved confidence and improve their self-esteem; this leads to success in other areas of their lives, including academic achievement (Broh, 2002). While there is some uncertainty about how much of a link can be established between extracurricular activities and self-confidence, other researchers suggest a parallel connection. Confidence is contagious, and when a student gains confidence from participation in extracurricular activities, it will translate to more confidence in school activities (Morris, D., 2016). Students might have more determination and try harder when solving problems or try harder due to improved self-confidence from extracurricular activity participation, leading to academic success. With the research only providing a loose link to these non-cognitive skills, self-confidence alone cannot determine a relationship between extracurricular activity participation and improved academic achievement. If it is proven that participation in extracurricular activities enhances a student’s self-esteem, the possible benefits of getting an underrepresented student population involved in extracurricular activities are exciting to imagine. Since students from low SES families are not participating at a high rate in extracurricular activities, they miss out on an opportunity to improve their self-esteem. Therefore, I need research to find the perceived benefits that extracurricular activities have on low SES students. If the study can support such possible benefits, schools and communities can work together to participate in extracurricular activities.

Engagement

The second non-cognitive skill that can be enhanced through extracurricular activity participation deals with student engagement. The thought is that if a student is involved in school-based extracurricular activities, it will lead to more engagement in other school activities, including the classroom. Many researchers agree that student engagement is directly associated with improved academic outcomes (Broh, 2002; Eccles & Barber, 1999; Fredericks & Eccles, 2006; Gorski, 2020; Neely & Vaquera, 2017).

Neely & Vaquera (2017) pointed out, "the common fundamental premise is that greater engagement leads to improved academic engagement" (Neely & Vaquera, 2017, p.1041). While more research suggests engagement has a stronger link to student achievement than self-confidence, it alone is not the only reason participation in extracurricular activities leads to increased academic achievement. Morris, E., 2019 alluded, "school attendance and classroom engagement were largely associated with GPA (β=.356, p<.o1)" (p. 9), which accounted for some of the variances in student data and school fixed efforts. If a student invests their time in extracurricular activities and it leads to their success, researchers believe they will also dedicate time to academics and see similar success (Haghighat & Knifsend, 2018).

The problem with this concept occurs when a student commits time to extracurricular activities and is not successful. Is it possible that extracurricular activity has a negative impact on academic achievement due to the student becoming frustrated and no longer giving time to either? Researchers who use a zero-sum theoretical framework propose that extracurricular activities negatively impact a student's academic achievement. In a zero-sum theoretical framework, any time not spent on academics by students reduces the time a student can spend on academics, resulting in a negative impact on academic achievement (Chambers & Schreiber, 2004).

If a student increases the amount of time they spend on homework, there will be increased academic achievement. There has been a lot of research on homework and academic achievement, and if students spend more time on homework, there is a positive impact on academic achievement (Chambers & Schreiber, 2004; Keith & Cool, 1992; Keith et al., 1986).

The link between engagement and academic achievement needs an extra step by assuming a student will spend spare time on activities such as homework. In one study that reviewed how students spent their time after school, watching TV was the only activity that negatively impacted academic achievement (Cooper et al., 1999). If a student gets discouraged and stops spending time on homework, they will not have a sudden academic drop off. Rather they should maintain their current level of academic achievement as long as they are not just sitting idle watching TV.

Another area of engagement that has been proven to benefit students with academic achievement is staying in school. Research in the past few years indicates that when students stay in school (probably because they are engaged in school), it reduces their likelihood of dropping out (Neely & Vaquera, 2017; Trudeau & Shephard, 2008). Keeping kids in school is critical for the student, the school, and society in general in this era of a competitive economic environment. There are some exceptions, but most researchers agree that engagement is a positive factor for students' school success.

In today's economic environment, students need to have at least a high school diploma. Students need to graduate to have multiple options to pursue after high school. Educators want their students to graduate with the skills to meet the demands of the job force. Students can elect to take advantage of any post-secondary opportunity, such as college, trade school, or a job. Regardless, a high school diploma is essential.

Schools are measured by their graduation rate, which is the percentage of eligible students to graduate in a particular year divided by those who graduate. Schools typically aim for 100% graduation rates, even though there are factors that prevent high graduation rates from happening. Extracurricular activity participation is one way in which educators can encourage students to stay in school. However, not all ECAs may provide the same benefits; some research believes that only sports reduce dropouts (Broh, 2002). The main reason for this is that the students who participate in academic and other extracurricular activities already perform well and are not at risk of dropping out. Therefore, there is no reason to focus on non-athletic based ECAs.

While there is no way a school system can prevent a student from dropping out, there seems to be a connection between student engagement and school success. That success is both academic success and students' successfully graduating high school. Student engagement is a crucial non-cognitive skill that has been proven to foster academic success and student retention (Neely and Vaquera, 2017). Academic achievement is the focus, but you cannot have academic success if you drop out of school.

Grit/Self-Discipline

Another critical non-cognitive skill that appears in many research findings is the concept of self-discipline and Grit. Most extracurricular activities require the participant to have self-discipline. In research by Hill (2017)," self-discipline is the self that bears responsibility for examining and exhorting the self" (Hill, 2017, p. 290). If a student increases their ability to control themselves and where to put their focus, it can lead to positive results. Extracurricular activities give students a chance to practice self-discipline and attention to detail, planning, and learning to persevere (Haghighat & Knifsend, 2018). Once again, extracurricular activities build students' non-cognitive skills associated with positive academic achievements.

Self-Discipline is a little different from other non-cognitive traits in that it seems to have a positive impact on academic outcomes regardless of the extracurricular activity (Holland & Andre, 1987). If students' participation in extracurricular activities does not lead to competitive success, they can still benefit from improved self-discipline. If school leaders are attempting to increase their students' self-discipline, they can invest in various extracurricular activities. If data can be collected to include students from low SES families, research can determine how much ECA participation impacts self-discipline from an underrepresented subgroup.

Grit, on the other hand, is a combination of perseverance and passion that people use to successfully overcome challenges both in the contexts of sports and everyday life while working toward long-term goals (Akos & Kretchmar, 2017; Duckworth et al., 2007; Duckworth & Quinn, 2009). People often say that a person is *gritty*, which can be attributed to their success. Educational and career success may also be outcomes of grit; for example, people who become gritty are less likely to drop out of high school (Bartone et al., 2008; Duckworth, 2016; Eskreis-Winkler et al., 2014; Nothnagle & Knoester, 2022).

If grit is so important, then how can we improve it? Participation in athletic-based ECAs might be able to enhance a person's grit. Participating in sports may encourage the development of grit because sports present a multitude of physical, mental, and social challenges (Pierce et al., 2017). Sports commonly emphasize discipline, responsibility, teamwork, and goal-setting traits that encourage the development of grit (Coakley, 2011; Duckworth, 2016; Larkin et al., 2016). Increasing students' involvement in athletic ECAs becomes even more important in a school environment. Sports participation can develop grit, which can mitigate mental health risks and contribute to academic and professional success (Coakley, 2011; Duckworkth, 2016; Eskries-Winkler et al., 2014; Nothnagle & Knoester, 2022). If schools increase student involvement in athletic-based ECAs, then students might be able to become grittier and also improve academic outcomes.

Work Ethic

Any student, past or present, would likely say it takes a strong work ethic to succeed in extracurricular activities. If you want to be great at chess or football, you must work hard at it, either physically or mentally, or both. In research by Miller et al. (2002), “work ethic is a commitment to the value and importance of hard work” (Miller, 2002, p. 452). While measuring a person’s work ethic is difficult, it is safe to say that most people can identify it when they see it. If a person is willing to work harder, their hope is that it will produce positive rewards.

Besides gaining the benefits from a strong work ethic, another advantage is increasing social capital through interactions with peers and adults (Snellman et al., 2014). If a student’s social capital increases due to acquiring a solid work ethic from participation in extracurricular activities, there can be a link established to increased academic achievement. Teaching non-cognitive skills such as a strong work ethic, respect for authority, and perseverance, sports participation can develop skills that are consistent with educational values and lead to improved academic outcomes (Broh, 2002; Coleman, 1961, Miracle & Rees, 1994). Again, there is not just one non-cognitive skill directly tied to increased academic achievement, but rather multiple non-cognitive skills. Each non-cognitive skill can lead to positive academic achievement independently, but together they collectively provide a more powerful impact. There is no doubt that students from low SES already can possess a work ethic; however, it might not be utilized to its fullest potential at school. Students who must take care of younger siblings or work to support the family finances are not benefiting in the same way as students who participate in extracurricular activities. Additional research would be needed to identify the barriers for students from low SES families and participation in extracurricular activities. If the obstacles are identified, then the school district and community can find ways for the students to overcome the barriers and utilize the same work ethic they possess in a more academic setting.

Relationships

The last non-cognitive skill I want to focus on is building relationships. A student's involvement in school-based and community activities allow students to build relationships with adults outside of their families (Eccles et al., 2003; Jordan & Nettles, 1999; Morris, D., 2016; Stanton-Salazar, 2010). Building positive relationships with coaches, teachers, and peers can help students feel connected to their school. If a student is connected, their engagement can increase. As stated earlier, engagement can lead to positive academic achievements.

Students who participate in extracurricular activities can develop non-cognitive skills due to improved relationships with adults and peers and apply them in the activity (Haghighat & Knifsend, 2018; Morris, D., 2016). These skills can also be transferred to classroom activities as they have similar uses. Like all the other non-cognitive skills discussed, there is a link between positive relationships and academic achievement that might be difficult to identify independently. Still, the non-cognitive skills students gain from extracurricular activity participation positively impact their academic achievement (Cooper et al., 1999).

Building positive relationships is the key to successful academic work. Students might experience a negative impact on academic achievement due to poor relationships with coaches. If the coaches do not understand the school's vision for extracurricular activities, their message may turn students away from participation or cause them to be disengaged (Cooper et al., 1999). It is imperative that a school district set a clear vision of how extracurricular activities can provide benefits to improve academic achievement and ensure their coaches instill that belief through positive relationships with students. If schools are going to improve low participation from students from low SES families, their first experience with an extracurricular activity must be positive.

The hiring of qualified individuals to be coaches and sponsors is a crucial part of extracurricular activities being beneficial. There is not much research that identifies the traits and characteristics of quality coaches and sponsors. To get this information, an additional study would need to be conducted. Schools need to train their coaches and sponsors to share the mission of the school and provide a positive experience for their students (White & Gager, 2007). If schools can successfully do this, it will give students the best opportunity to elevate their non-cognitive skills, especially for students from low SES families.

Biases

Another thing to consider is selection bias. Since many researchers send out surveys, you must be mindful that you are sending out surveys to cover all groups of students. Failure to do this could skew your data and create a selection bias (Chambers & Schreiber, 2004; Holland &

Andre, 1987; Neely & Vaquera, 2017). Some research is calling for a systematic approach to studying extracurricular participation and academic achievement. Researchers think this approach will implement methods to minimize biases (Shulruf, 2010). Other biases, such as teacher biases, need to be considered. Some researchers suggest that teachers might give students who participate in extracurricular activities improved grades even if they did not deserve it and negative grades just because they participate in extracurricular activities (Broh, 2002). For researchers moving forward, you need to take measures to prevent biases to ensure your results are accurately representing what is happening.

Data Sets

Many researchers mention issues due to the data sets used. The data sets commonly come from extensive national surveys and are often old (Neely & Vaquera, 2017; Shulruf, 2010). If the data set is too old, then the data might not be comparable to when it was initially collected. For example, in Indiana, the number of times students could participate in athletic-based extracurricular activities was limited until the 2010s. Then rule changes were implemented, letting teams practice more, thus allowing students to participate more often, and the data is no longer in a similar setting. Another issue of most research is using secondary data from a more extensive study (Bradley & Conway, 2016; Shulruf, 2010). If researchers use secondary data, many data fields might not match what they need for their research. The researcher then has to work within the established data instead of collecting data specifically designed for their work (Morris, D., 2016; Neely & Vaquera, 2017).

Other issues with data sets are concerns over how the data is classified. According to Chambers and Schreiber (2004), "Schreiber created a more explicit categorization where activities can be classified as in-school/out-of-school, organized/unorganized, and academic/non-academic." Other classification issues arise over the classification of sports ECA's, for example, team sports vs. individual sports (Broh, 2002). The biggest issue is the difference between being on an academic and a sports team. Both should not be included in an overarching category of extracurricular activity (Chambers & Schreiber, 2004).   If I continue to lump them all into the same category, we cannot identify which extracurricular activities have a more significant impact on academic achievement.

Breadth And Intensity

Another critical point of recent research is the concept of breadth and intensity related to extracurricular activities. Breadth refers to the number of extracurricular activities a student is in at one time (Haghighat & Knifsend, 2018; Peck et al., 2008). For example, if a student was involved in running cross country, student council, and the math academic team their breadth would be greater than a student just running cross country. This student would be engaged in three extracurricular activities at one time. Each extracurricular activity would benefit students with different skills related to classroom performance and academic achievement (Haghighat & Knifsend, 2018).   The more activities a student can be involved in, the more opportunities to gain skills and improve non-cognitive skills.

On the other hand, intensity refers to how much involvement a particular extracurricular activity takes in each week (Haghighat & Knifsend, 2018). If a student spends two hours a day, five days a week, running for cross country, that has more intensity than peer tutoring for one hour a week. Measuring intensity is still a relatively new concept, so the results are still being studied. However, research has shown that breadth seems more beneficial than intensity regarding academic achievement (Afalla, 2020; Haghighat & Knifsend, 2018). Even though some research did not establish a meaningful relationship between academic outcomes due to intensity, others have shown intensity positively impacted academic achievement. Yet more recent research claims students must be cautious of their time on extracurricular activities. If a student overextends themselves, they might not have enough time to focus on academic work and diminish returns (Afalla, 2020). Diminishing returns seem to be a key negative aspect of participation in extracurricular activities. If students participate in an extracurricular activity multiple times a week, there appears to be a positive relationship.

SES

Finally, there is a limited amount of research on students from low-SES families. (Broh, 2002). One of the main reasons is the lack of data that is usable by researchers. Haghighat and Knifsend, 2018 explained, “students from low SES and single-parent homes were more likely excluded based on missing data” (p. 617). One of the focal points of my research is how students from low SES families benefit from participation in extracurricular activities. One research gap that my study intended to address was collecting meaningful data from this sub-group.

SUMMARY

The research indicates that participation in extracurricular activities can be beneficial. It can lead to benefits to a student’s non-cognitive skills which can lead to improved academic achievement. However, more research needs to focus on students from low-SES families as many data sets omit their responses. Chapter Three will discuss the research methods of this study.

CHAPTER THREE: METHODS

This chapter describes the research methods used to determine the relationship between participation in athletic ECAs and academic outcomes for students from low SES families. In addition, this mixed methods study also explains the relationship athletic ECA participation has to a student's emotional intelligence and non-cognitive skills. The chapter begins with a review of the purpose and research questions. The next sections discuss the research design of the study, the population and sample of the school community, the instrumentation that was used, and the data collection process. Finally, the proposed way the data was analyzed will be discussed and the study's limitations have been included. The chapter ends with a summary.

Purpose of the Study

The primary purpose of this mixed-method study was to compare the relationship between the academic outcomes of low socioeconomic status (SES) students who participate in extracurricular athletic activities (ECAs) to those who do not. To address this relationship during Phase One, I collected data from PowerSchool to provide the necessary information on the following independent variables: participation or nonparticipation in athletic ECAs, gender, and SES status (free vs. reduced). Grade point average (GPA) data represented the dependent variable I examined. A second purpose was to compare the differences between the control group (low SES students who do not participate in athletic ECAs) and the comparison group (low SES students who participate in athletic ECAs). Based on the quantitative research phase that was conducted, I had two predictions for the data analysis results. My first prediction was that the comparison group of students from low SES families who participated in athletic ECAs would have higher GPAs than the control group, and secondly there would be a relationship between GPAs and athletic ECA participation. The last purpose of this study was addressed during Phase Two. I used a qualitative design as I interviewed students from low SES families who participated in athletic ECA's. These interviews provided a more in-depth understanding of students' growth in non-cognitive skill areas (relationships, work ethic, self-esteem/self-confidence, engagement, and grit) through their lived experiences.

Research Questions

Based on past research literature and the purposes of this study, I addressed these research questions:

1. What relationship exists between the GPA averages of all students who participate in athletic-based ECAs compared to all students who do not participate in athletic-based ECAs?
2. What are the differences in GPA between the control group (Low SES students who do not participate in athletic ECAs) and the comparison group (Low SES students who participate in athletic ECAs)?
3. Based on student perceptions, how does participating in athletic-based ECA's change low SES students' non-cognitive skills, such as grit/self-discipline, self-esteem, engagement, and work ethic?

Research Design

Identifying the relationship between participating in athletic ECAs and academic outcomes is not easy. Quantitative data paints a broad picture of the relationship, but the goal of this study is to go deeper. Therefore, this study consisted of both quantitative and qualitative measures with a mixed-methods approach. Mixed methods provide more breadth and depth to the research by enabling the questions of both *what* and *why* to be addressed when analyzing and explaining the data (Hoover and Krishnamurti, 2010). A sequential explanatory design was used, in which quantitative data was gathered first, then qualitative data was gathered and analyzed separately. The data collected in both phases was given an equal weighting (Hafsa, 2019).

The quantitative data was collected by searching in a school database called PowerSchool. The database holds information regarding students' gender, ethnicity, GPA, SES, grade level, age, and athletic participation. The information was downloaded into an Excel spreadsheet where it can be analyzed in the Statistical Package for the Social Sciences (SPSS).

For the qualitative aspect of this research, students who participate in ECAs and are also identified as qualifying for free or reduced lunches were purposefully selected to be interviewed. The interview aims to gather better insight into these students' perceptions of how athletic ECA participation has influenced their academic outcomes, emotional intelligence, and non-cognitive skills. The priority for selection was those students who show the greatest quantitative gains during the first phase of this research study.

Sample

I have selected two schools to examine. The first school selected is a rural high school in East-Central Indiana with 1,387 students in grades 9-12. The second school is in the Southwest central portion of Indiana and has 1,292 students in grades 9-12. Students from low SES families were the focus and divided into two categories: those who participate in athletic ECA's and those who do not. The study used a mixed-method approach to explore the relationship between athletic ECA participation (gender, pre-GPA, age, grade level, and SES) and academic outcomes (post GPA).

The first high school participating in the study encompasses four communities and the rural areas of those communities. The student population is majority (95.9%) White and is not economically disadvantaged (See Tables 1 and 2). For example, 73.68% of the sample is designated as paid lunch, 6.4% as reduced, and 19.89% are free lunch.

Table 1

Student Ethnicity School 1

Ethnicity	9th Females	9th Males	10th Females	10th Males	11th Females	11th Males	12th Females	12th Males	Total
Native American	0	0	1	0	0	0	1	0	2
Black/African American	6	2	7	4	4	10	7	2	42
Asian	1	3	3	4	5	2	1	3	23
Hispanic	10	6	4	6	2	3	4	5	42
White	151	173	168	154	142	151	161	150	1250
Multi-Racial	9	7	4	4	4	2	5	5	40
Hawaiian/ Pacific Islander	0	0	0	0	0	0	1	0	1

*Note.*Based on Indiana Department of Education website data (https://inview.doe.in.gov/schools/1052555053)

The staff includes one principal, two assistant principals, three counselors, one media specialist, one school nurse, one nurse assistant, one Jobs for American Graduates (JAG) instructor, and 73 teachers (including special education teachers). The school district consists of three elementary schools (K-6), one middle school (7-8), and one high school (9-12). The high school offers educational programs to earn a diploma with Summa Cum Laude designations, Core 40 with Academic Honors, Core 40 with Technical Honors, Core 40, and/or a general diploma.

Table 2

Student Lunch Status School 1

Grade	Boys			Girls		
	Free	Reduced	Paid	Free	Reduced	Paid
9th	38	12	139	50	7	121
10th	38	6	127	40	17	128
11th	38	9	120	20	13	122
12th	25	11	128	27	14	137
Total	139 (20.1%)	38 (5.49%)	514 (74.38%)	137 (19.68%)	51 (7.33%)	508 (72.98%)

Note. Based on Indiana Department of Education website data. (https://inview.doe.in.gov/schools/1052555053)

Graduating classes of 2023 and beyond will complete the graduation pathways while, earning one of the four following Indiana High School diploma options: General designation, Core 40 designation, Academic Honors designation, or Technical Honors designation. The high school currently utilizes a semester system implemented in the 2010-2011 school year. Students are enrolled in seven classes, 50 minutes in length, per semester. Teachers teach six classes per semester.

Table 3

Student Ethnicity School 2

Ethnicity	9th Females	9th Males	10th Females	10th Males	11th Females	11th Males	12th Females	12th Males	Total
Native American	0	1	0	1	0	1	0	0	3
Black/African American	1	1	6	4	5	3	3	4	28
Asian	1	2	2	3	0	2	1	2	13
Hispanic	1	0	0	0	0	0	0	0	1
White	143	199	174	171	145	140	146	152	1271
Multi-Racial	0	0	0	1	0	1	4	3	9
Hawaiian/ Pacific Islander	0	0	0	0	0	0	0	0	0

Note. Based on Indiana Department of Education website data (https://inview.doe.in.gov/schools/1059256329)

In the second high school, there are 93 certified faculty members (teachers, counselors, and administrators). Additionally, students and community members are served by approximately 25 support staff members. The school district consists of seven elementary schools, one intermediate school, one middle school, and one high school.

Core classes follow Indiana academic standards and prepare students for Core 40, Academic Honors, and Technical Honors diplomas. The high school uses a trimester system and implements a 65-minute block scheduling system. Teachers teach four classes per trimester.

The second high school that is participating in the study encompasses one community that is rural in nature. The student population is majority (95.9%) White, and most students are not economically disadvantaged (See Tables 3 and 4). For example, 57.3% of the sample is designated as paid lunch, 35.5% are free, and 6.4% are reduced lunch status.

Table 4

Student Lunch Status School 2

Grade	Boys			Girls		
	Free	Reduced	Paid	Free	Reduced	Paid
9th	81	15	107	45	19	82
10th	68	13	100	66	9	107
11th	52	6	92	55	16	76
12th	51	8	102	52	9	93
Total	252 (36.3%)	42 (6.04%)	401 (57.7%)	218 (34.7%)	53 (8.42%)	358 (56.92%)

Note. Based on Indiana Department of Education website data (https://inview.doe.in.gov/schools/1059256329)

Purposeful sampling was used for Phase Two, based on certain criteria. Purposeful sampling occurs when a researcher selects the sample that they believe has the most to offer to the study (Farrugia, 2019; Palinkas et al., 2013). According to Farrugia (2019), "the selection process can be guided by consideration of variables or qualities of potential participants that affect the contribution they could provide to the study" (p. 70). I used simple demographics for my study, including gender, pre-GPA, age, grade level, and SES. Purposeful sampling is a technique used in qualitative research to identify and select cases for the most effective use of limited resources (Patton, 2002). Based on the criteria, I selected 8-10 students to interview, allowing me to obtain the richest data from the limited number of interviews. As indicated earlier, priority was given to those qualifying students with the highest quantitative results.

Instrumentation

This mixed methods study utilized instruments that measured both the quantitative and qualitative data collected. The quantitative data were collected from the school's PowerSchool database to store data. The data can be sorted by students who participate in athletic ECAs and those that do not. Then the data can be sorted by SES as well as GPA and gender.

The qualitative data for the study were collected from student interviews. The interview protocol for students can be found in Appendix A. The interview protocol is based on important non-cognitive skills reviewed in my literature review. Interview questions are also aligned with my theoretical framework, the Bar-On model of Emotional Intelligence.

Data Collection

Before collecting data, I sought approval from the Institutional Review Board (IRB) to ensure I used proper research ethics and guidelines. The quantitative data were exported from Power School and then copied and pasted into an excel spreadsheet. The data were sorted and converted to a Statistical Package for the Social Sciences (SPSS) database. Finally, additional information was obtained through interviews with students from low-SES families who participated in athletic ECAs.

For my research, I completed the quantitative phase first to obtain the essential data by running reports in Power School. This data addressed my first two research questions identified in Figure 1. The data obtained from PowerSchool can easily be added to Excel and later converted to SPSS. These data were sorted to give me the information to determine students who are from low SES families and who also participate in athletic ECAs. The sorted information also identified the students from low SES families who do not participate in athletic ECAs. The two candidate pools of low SES students who do and do not participate in athletic ECAS comprised the data for comparison of the two groups. I used grade level, gender, and SES based on lunch status and athletic ECA participation to establish the two groups. This allowed me to compare students where the only difference I will consider is athletic ECA participation. By doing this, I hoped to be able to isolate the relationship athletic ECA participation might have on academic outcomes such as GPA.

For the qualitative phase, I used purposeful sampling. According to Johnson et al., (2019), “purposeful sampling reflects the intentional selection of research participants to optimize data sources for answering the research question” (p. 141). I created a candidate pool based on grade level, lunch status, gender, and athletic ECA participation. Once those students are identified, I sent out a consent form electronically to parents and students. Figure 1 references the qualitative phase for research question #3.

Figure 1

Corresponding Survey and Interview Items to Research Items

Research Questions	**Data Analysis**
What relationship exists between the GPA averages of all students who participate in athletic-based ECAs compared to all students who do not participate in athletic-based ECAs?	Analysis of Data: GPA, Gender, Age, Grade Level, athletic ECA participation, and SES Status. Data will be compared between the spring semester of 2022, the fall semester of 2022, and the spring semester of 2023. A hierarchical regression model will be used.
2. What are the differences in GPA between the control group (Low SES students who do not participate in athletic ECAs) and the comparison group (Low SES students who participate in athletic ECAs)?	Analysis of Data: GPA, Gender, Age, Grade Level, athletic ECA participation, and SES Status. Data will be compared between the spring semester of 2022, the fall semester of 2022, and the spring semester of 2023. A hierarchical regression model will be used.
3. Based on student perceptions from low SES students who are participating in athletic ECAs, what changes do they report about their non-cognitive skills, such as grit, self-esteem, engagement, and work ethic, which they consider resulted from their participation?	Student Survey: Interview questions: 2,3,4,5,6 Initial Coding or First Cycle Coding and Axial coding will be used.

Once I have obtained the proper consent forms, I proceeded with establishing my candidate pool. After the consent forms are completed, I estimate a candidate pool of 30-40 students who participate in athletic ECAs. According to Johnson et al., (2019), “Determination of the final sample size is based on having sufficient opportunity to collect relevant data until new information is no longer emerging from data collection, new coding, and/or no new themes are emerging that is reaching data saturation" (p. 141) The students selected were at random and included 8-10 students or until a point of saturation is reached. The number of interviews

Data Analysis

The data analysis included both quantitative and qualitative methods. Both descriptive and inferential statistics were utilized to analyze the quantitative data. Participant data were collected from Power School and included the following information: grade level, gender, SES status, GPA, and athletic ECA participation. A univariate analysis was completed to describe the sample. The standard deviation for each construct for each sub-group was reviewed. The independent variables included ethnicity, gender, SES status, GPA, and athletic ECA participation.

Descriptive Statistics

I used descriptive statistics to describe and summarize the basic features of the sample. Descriptive statistics provide a way to describe data through measures of central tendencies, such as the mean, to summarize the data collected, and describe the sample of the study (Field, 2013). The descriptive statistics used were frequencies, means, and medians.

Quantitative Inferential Statistics

Inferential statistics were utilized to further analyze the quantitative data and to assess the strength of the relationships between the independent and dependent variables in the study. A hierarchical regression model was used to complete the inferential statistical analysis. According to Lewis, (2007), "hierarchical regression is an appropriate tool for analysis when variance on a criterion variable is being explained by predictor variables that are correlated with each other" (p. 10). I am trying to predict that academic outcomes are influenced by athletic participation based on GPA (dependent variable) while controlling for the independent variable demographic factors (gender, participation in athletic ECAs, and SES status).

According to Richardson et a., (2015), “hierarchical regression approach may be useful for reducing mean squared error in the cause-specific estimates of association and in some instances may permit estimation of association that is not estimable when fitting regression models one outcome at a time” (p. 464). In a hierarchical model the researcher can control the order of the variables and how they are entered, rather than past research (Lewis, 2007). Such practice increases predictive power of different variables on academic outcomes.

Qualitative Coding

Qualitative data from the interviews were in narrative form and analyzed differently, as described in this section. The first step in understanding the qualitative data collected was to conduct Open Coding, which is also referred to as Initial Coding or First Cycle Coding (Saldana, 2009). The Open Coding process includes a close reading of the data gathered, followed by breaking the data into distinct sections, and then comparing the data for similarities and differences. In addition, during this initial reading and digesting of the data, initial codes may start to be identified (Corbin & Strauss, 2007). Since my qualitative data were based on interviews with multiple students, the interview data were first transcribed. Then I examined that data closely through a line-by-line initial coding process. The coding was reviewed by my doctoral chairperson to ensure biases are minimized.

Then axial coding or second cycle coding was utilized to determine themes or larger categories. In other words, the data were then organized into common themes to explain what was occurring (Corbin & Strauss, 2007; Saldana, 2009). Once the themes are identified, I can further analyze the data for connections or patterns among the themes. This allows me to determine student perceptions about how athletic ECA participation might have influenced their non-cognitive skills.

Limitations

One possible limitation is that the generalizations of findings from this study may have been affected because this study was completed within school districts with a relatively limited sample size. Another possible limitation was bias. Based on my stance on the topic, I had to limit my potential for bias. To limit my biases, I worked with my chairperson to review my coding and other analyses. Also, according to Kross and Giust (2019),

> A strategy to identify researcher bias is to use reflexive journaling throughout the research process. Reflexive journaling is a process in which the researcher reflects on the outcomes of the study as well as on the research process itself and promotes self-awareness. (p.26)

The use of journaling can keep me focused on the process and outcomes and keep me apprised of potential biases.

Attendance was initially planned to be another independent variable in my study. However, starting with the 2020-2021 school year, schools could not hold students accountable for attendance due to the Covid-19 pandemic. This trend continued during the 2021-2022 school years, which served as my base year. Attendance data during this time was skewed with most students missing more days than normal. Therefore, I decided not to include attendance as a variable.

The collection of consent forms was a limitation as well. Historically, research studies failed to get meaningful data from low SES families due to incomplete survey results or no response at all. Additionally, the use of grade point averages was a limitation as teacher grading is subjective in nature. Grading can be subjective because of teacher differences and general problems with grade inflation resulting in a discrepancy between the grades assigned from teacher to teacher in the same subject area. As a result, one student might receive a higher or lower grade, which impacts their GPA.

Finally, my research focuses on athletic-based ECAs, not all ECAs. Studies have shown that nonathletic-based ECAs also provide benefits for students and their academic outcomes. Focusing on just athletic ECA participation might make the results more difficult to interpret as the variable of non-athletic ECAs cannot be controlled during this study.

Positionality

For this research, I need first to frame my stance on the subject. In this research, I strongly feel that athletic ECAs play an important part in a student's life. I was a high school student who participated in athletic ECAs and came from a low SES background. I played baseball until 7th grade and then started football in 8th grade. Athletics was always something I enjoyed but was not vital to my existence until my parents divorced before I entered high school. Coming into high school, I played football but was going down a rough path. I did not care much about school until my football coach took me under his wing. He saw something in me that I did not see. Due to this, I was drawn into our football program and dedicated myself to getting better. As a result, I started caring more about school. As I neared graduation, I had planned to be an electrician. Still, because I worked on my grades and dedicated myself to football, I was offered a few opportunities to continue my football career, which I did at Manchester University (College). Had I not been a part of high school athletic ECAs, I would not have gone to college or been writing this dissertation. Due to athletic ECAs in high school, I ended up in education as a social studies teacher and coach. I taught for 14 years and coached 13. I tried to help my students be successful in the classroom and through the sport in which they were competing. I believe that athletic ECAs provide opportunities for students to be successful on and off the field.

Summary

This chapter highlighted the research methods that were used during this mixed-methods study. The research design was a sequential explanatory design to incorporate the data collection from Power School and student interviews. Then a review of the sample and data collection procedures were included. The quantitative data provided descriptive statistics of student data and the relationship of the independent variables (gender, age, grade level, SES, and athletic ECA participation) to the dependent variable (GPA) to students' participation in athletic ECAs. Additionally, I analyzed the differences between a comparison and control group of students who participate in ECAs or not. The qualitative data documented the students' perceptions of how athletic ECA participation might have changed their emotional intelligence, non-cognitive skills, and academic outcomes. Chapter Four describes the results of the study.

CHAPTER FOUR: RESULTS

The outcomes of this mixed methods study are systematically arranged into quantitative and qualitative results. To begin, the quantitative data collected during the study were utilized to create descriptive statistics. Following that, the inferential statistical findings are outlined according to the research questions. Finally, the qualitative data obtained from student interviews were subjected to both first and second-cycle coding processes. The most prominent codes and major themes are presented in matrices and elaborated upon. This holistic approach, combining both quantitative and qualitative data, offers a more comprehensive understanding of the study's results.

Quantitative Data

The following section unpacks the quantitative data that were collected and analyzed during this study. Descriptive and inferential statistics were both utilized to better understand the quantitative data collected and determine if any of the data might be statistically significant.

Table 5

School Enrollment Both Schools

	Frequency	Percent
School 1	1,296	51.1
School 2	1,238	48.9
Total	2,534	100.0

Descriptive Statistics

The quantitative aspect of my study was derived from data collected from two high schools in Central Indiana, which share comparable population sizes and demographic characteristics. The first school is in the east central region of Indiana, while the second is in the southeastern central part of the state. The descriptive statistics that pertain to demographics are described in this section.

The combined student population of the two schools amounted to 2,534, as shown in Table 5. These students were subsequently categorized based on their Socio-Economic Status (SES), distinguishing between those eligible for free/reduced lunch and those who paid. This categorization resulted in a total of 993 students available for analysis.

Table 6

Students Meeting Sample Requirements (Low SES)

	Frequency	Percent
Complete (Included in Sample)	709	71.4
Missing one or more variable	284	28.6
Total	993	100.0

In the initial phase of our descriptive analysis, my statistician and I identified that 284 students lacked complete data for one or more variables. Consequently, we employed list wise deletion to handle this missing data, a method that involves removing any record with incomplete information. This process refined our dataset, ultimately yielding an effective sample size of 709 participants, as detailed in Table 6.

Table 7

Participated in Sports All Students

	Frequency	Percent
No	1,675	66.1
Yes	859	33.9
Total	2,534	100.0

The primary aim of this study was to investigate the relationship between athletic participation and academic performance among students from low Socio-Economic Status (SES) backgrounds. An analysis of the student population from both schools revealed that a relatively small proportion, 33.9%, were involved in athletic activities, as detailed in Table 7. This statistic underscored the need to explore how such limited participation in sports may correlate with the academic outcomes for students from lower SES families.

According to Table 8, only 23.1% of the students in the free/reduced population in this study participated in sports. This is a sharp decline in participation for students from paid lunch where 46.3% of students participate in athletics (see Table 9).

Table 8

Participated in Sports from Free/Reduced Population

	Frequency	Percent
No	545	76.9
Yes	164	23.1
Total	709	100.0

According to the National Federation of State High School Association's (NFHS) 2021-2022 survey, 57.4% of high school students participated in athletics (2022). Regardless of the student's lunch status, both schools fall below the national average for athletic extracurricular participation.

Table 9

Participated in Sports from Paid Population

	Frequency	Percent
No	954	53.7
Yes	820	46.3
Total	1,774	100.0

The preliminary analysis conducted on the population data indicated acceptable levels of skewness, aligning with the criteria for regression analysis. This assessment was based on the guidance and expertise of my statistician, Dr. Jim Jones, from Ball State University. Dr. Jones' advice affirmed that the skewness values fell within a range considered suitable for the application of regression techniques in our study.

Table 10

Ethnicity for total population

	Frequency	Percent
American Indian	6	.2
Black/African American	60	2.4
Asian	33	1.3
Hispanic	46	1.8
White	2340	92.3
Multi-Racial	46	1.8
Native Hawaiian/ Pacific Islander	2	.1
Total	2,533	100.0

The population is made up of two Central Indiana schools, which both lack diversity. It comes as no surprise that 91% of the students in the population are White (see Table 10). With such a lack of diversity, the study did not address differences based on ethnicity.

Table 11

Grade Level Athletic Participation for Total Population

	Paid Males	Paid Females	Low SES Males	Low SES Females
9th Grade	136	91	22	7
10th Grade	112	79	34	28
11th Grade	109	79	32	24
12th Grade	98	76	21	25
Total	455	325	109	84

According to Table 11, there are more students from grade 10 than any other grade. As students progress through high school, their participation in athletics appears to fall off. One reason for this is that many teams must cut players. In the world of athletics, it is widely understood that when a coach assembles their team, when there are only a limited number of roster spots available, they are faced with difficult decisions. Typically, when two players possess similar skill sets, the coach tends to select the younger player, this frequently results in the older student being left out of the team, consequently reducing their chances for athletic participation.

Table 12

Student Lunch Status for Total Population

	Frequency	Percent
Total Free	803	31.7
Total Reduced	190	7.5
Total Paid	1541	60.8
Total	2534	100.0
Sample Free	574	81.0
Sample Reduced	135	19.0
Total	709	100.0

This study focuses on students from lower SES families rather than higher SES families due to previous research already showing the positive relationship between athletic participation and academic achievement for students from higher SES families. For my study, the focus is on low SES. The initial total student population was 2,534, but after excluding students with missing variables, the count was reduced to 2,044. Of these, 39.2% are eligible for free or reduced lunch, amounting to 709 students identified as low socioeconomic status (SES) because they receive free or reduced lunch. Within this subset of 709 students, 81% received free lunch, while 19% benefited from a reduced lunch price (see Table 12).

Inferential Statistics

In this section, I structured the inferential statistical analyses conducted alongside the quantitative research questions of this study. The utilization of statistical techniques such as hierarchical regression, Pearson's correlation, and ANOVA has enabled the presentation of my findings. This section is organized based on the specific research questions under consideration.

Research Question 1. What relationship exists between the GPA averages of all students who participate in athletic-based ECAs compared to all students who do not participate in athletic-based ECAs?

To explore the initial research question, we employed a hierarchical regression model to examine students who participate in athletics and those who do not. Initially, those descriptive statistics, which pertained to directly answering the research questions, were calculated to understand the distribution and traits of the variables involved. Table 13 displays these statistics, focusing on GPA values and their variations across different terms. For instance, the spring 2022 GPA had an average of 2.65. Comparatively, the average GPA for the same group rose to 2.99 in spring 2023, indicating an improvement in the mean GPA over time (see Table 13).

Table 13

Descriptive Statistics for All Students

	Mean	Std. Deviation	N
Change in GPA (S23-S22)	.33	.76	2044
Spring 2022	2.65	1.01	2044
Gender	.51	.50	2044
Ethnicity	.07	.26	2044
Grade level	10.77	.95	2044
Free vs Reduced	.08	.28	2044
Free vs Paid	.57	.50	2044
Participated in Sports	.36	.48	2044

A student's grade level showed a positive correlation of 0.22, with a highly significant p-value of less than 0.001. This indicates that as a student progresses through high school, there tends to be an upward trend in their GPA each year. Additionally, a student's socioeconomic status (SES) was found to impact their GPA significantly, either positively or negatively. For students who pay for their lunch, there is a positive correlation with their GPA of 0.14. This suggests that students paying for lunch will experience an increase in their GPA of 0.14 from Spring 2022 to Spring 2023. On the other hand, students who receive free lunch show a negative correlation of -0.06 with their GPA. This means students receiving free lunch tend to have a GPA 0.06 points lower than those receiving reduced lunch prices (see table 14).

Table 14

Correlations Change in GPA (S23-S22)

	Pearson Correlation	Sig. (1-tailed)	N
Change in GPA (S23-S22)	1.00	.	2044
Spring 2022	-.47	<.001	2044
Gender	.00	.422	2044
Ethnicity	-.03	.127	2044
Grade level	.22	<.001	2044
Free vs Reduced	-.06	.005	2044
Free vs Paid	.14	<.001	2044
Participated in Sports	.07	.001	2044

The correlation between participation in sports and change in GPA (from Spring 2022 to Spring 2023) is .07 with a significance (p-value) of .001. This indicates a small, but statistically significant, positive relationship between participating in sports and an increase in GPA (Table 14). This shows that athletic participation accounts for 7% of a student's change in GPA from spring 2022 to spring 2023 regardless of the students' socio-economic status.

My research primarily examined students from low socioeconomic backgrounds, their involvement in athletics, and GPA. Table 14 illustrates some other statistically significant results that were not specifically addressed in my research questions. Notably, the Spring 2022 variable exhibited a negative correlation, with a coefficient of -0.47, and was statistically significant, evidenced by a p-value of less than .001. For example, if students started with higher grades in the Spring of 2022, then there was little or no change to their GPA in the Spring of

2023. Of course, students with higher GPAs have less ability to increase their GPAs.

The model summary shows how well various models predict the change in GPA. According to Table 15 the R Squared is 0.32, meaning that about 32% of the variation in GPA change is explained by the model. The inclusion of "Participated in Sports" as a predictor increases the R Square value from .32 to .34, suggesting that sports participation does contribute to the variability in GPA changes, but again, the impact is statically significant and relatively modest (Table 15).

Table 15

Model Summary Sport Participation on Spring 2023 GPA Compared to Spring 2022

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.57[a]	.32	.32	.63	.32	160.17	6	2037	<.001
2	.58[b]	.34	.33	.62	.02	47.14	1	2036	<.001

a. Predictors: (Constant), Free vs Paid, Ethnicity, Gender, Grade level, Spring 2022, Free vs Reduced
b. Predictors: (Constant), Free vs Paid, Ethnicity, Gender, Grade level, Spring 2022, Free vs Reduced, Participated in Sports
c. Dependent Variable: Change in GPA (S23-S22)

The ANOVA indicates both models (Model 1 and Model 2) demonstrate statistical significance (see Table 16). The models use several predictors (like Free vs Paid, Ethnicity, Gender, etc.) to explain the variation in GPA change between spring 2022 and spring 2023. When comparing the two models, Model 2, which includes an additional predictor, “Participated in Sports,” shows a slightly better performance explaining GPA changes. This is evidenced by a lower Residual Sum of Squares in Model 2 compared to Model 1, indicating that “Participated in Sports” contributes positively to the model.

Additionally, the coefficient of determination (R-squared) in Model 2 is higher, suggesting a better fit to the data. Furthermore, the inclusion of "Participated in Sports" as a predictor in Model 2 enhances the explanatory power of the model, suggesting that engagement in sports has a discernible impact on GPA changes beyond the factors considered in Model 1.

Table 16

ANOVA Sport Participation on Spring 2023 GPA Compared to Spring 2022

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	376.58	6	62.76	160.17	<.001[b]
	Residual	798.21	2037	.39		
	Total	1174.79	2043			
2	Regression	394.64	7	56.38	147.13	<.001[c]
	Residual	780.14	2036	.38		
	Total	1174.79	2043			

a. Dependent Variable: Change in GPA (S23-S22)
b. Predictors: (Constant), Free vs Paid, Ethnicity, Gender, Grade level, Spring 2022, Free vs Reduced
c. Predictors: (Constant), Free vs Paid, Ethnicity, Gender, Grade level, Spring 2022, Free vs Reduced, Participated in Sports

Two hierarchical regression models were employed in this analysis. The first model used several independent variables, including Free vs. Paid lunch status, Ethnicity, Gender, Grade level, and Free vs. Reduced lunch status, as detailed in Table 16, to predict the dependent variable, which was the change in GPA from the spring 2022 to spring 2023 semesters. In the second model, we retained the same independent variables from the first model and introduced an additional variable: participation in athletic extracurricular activities (ECAs). This addition was designed to specifically assess the impact of athletic ECA participation on a student's GPA.

Table 17 reveals that including "Participation in Sports" in the second regression model has a modest but noticeable impact. Specifically, sports participation explains 21% of the variance in GPA changes, as indicated in the table. This suggests a slight yet statistically significant positive correlation between involvement in athletic extracurricular activities (ECAs) and shifts in GPA.

Table 17

Coefficients[a] Change in GPA (S23-S22)

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
2	(Constant)	-.17	.17		-1.03	.302		
	Spring 2022	-.42	.01	-.56	-29.27	<.001	.88	1.13
	Gender	-.13	.03	-.09	-4.80	<.001	.96	1.04
	Ethnicity	-.11	.05	-.04	-2.00	.046	1.00	1.00
	Grade level	.13	.01	.17	8.91	<.001	.93	1.07
	Free vs Reduced	.10	.05	.03	1.80	.072	.87	1.15
	Free vs Paid	.30	.03	.20	9.49	<.001	.75	1.33
	Participated in Sports	.21	.03	.13	6.87	<.001	.86	1.16

a. Dependent Variable: Change in GPA (S23-S22)

Students engaged in sports tend to exhibit a minor improvement in their GPA relative to non-participants. Nevertheless, the effect is not overwhelmingly strong, implying that while involvement in sports contributes positively to GPA, it is not the sole or most dominant factor. Other factors like parental influence, grade level, ethnicity, gender, and socioeconomic status (delineated as Free vs. Reduced and Free vs. Paid) also play crucial roles in influencing GPA fluctuations.

The research study examined the relationship between GPA averages of students participating in athletic-based extracurricular activities (ECAs) and those who do not, focusing on students from low socioeconomic backgrounds. Using a hierarchical regression model, the study revealed that the average GPA improved over time, indicating a positive academic trend.

Correlations were identified between various factors and GPA changes, such as a negative correlation with initial GPA, a positive correlation with grade level, and varying impacts based on socioeconomic status.

The study found a statistically significant positive relationship between participation in sports and GPA improvement, accounting for 7% of GPA change. Hierarchical regression models showed that including "Participated in Sports" as a predictor increased the model's explanatory power, with approximately 32% of GPA change variation explained initially, rising to 34% with sports participation as a predictor. Ultimately, sports participation explained 21% of GPA variance, suggesting a modest but significant positive correlation.

Research Question 2: What are the differences in GPA between the control group (Low SES students who do not participate in athletic ECAs) and the comparison group (Low SES students who participate in athletic ECAs)?

A hierarchical regression model was employed to address the second research question, focusing on the factors that influence GPA changes over time. Initially, descriptive statistical analyses were conducted to grasp the distribution and characteristics of the variables under scrutiny. These analyses, detailed in Table 18, encompass descriptive statistics for GPA values and the observed changes across different academic terms. The data reveal that the mean GPA in spring 2022 stood at 2.37, while in spring 2023, it rose to 2.59, indicating a noticeable increase in the average GPA (see Table 18).

The upward trajectory indicates a positive trend in academic performance, prompting further investigation into potential contributing factors. This increase was explored through the hierarchical regression model.

Table 18

Descriptive Statistics for Low SES Sample Change from Spring 2022 to Spring 2023

	Mean	Std. Deviation	N
Change in GPA (S23-S22)	.22	.66	709
GPA S22	2.37	.95	709
Gender	.46	.50	709
Ethnicity	.09	.29	709
Grade level	10.88	.81	709
SES	.19	.39	709
Participated in Sports	.23	.42	709

The data in the next tables highlight complex relationships between various factors and the change in GPA over a year. Notably, previous academic performance (GPA in S22) and grade level are significant predictors of GPA change, while other factors like gender, SES, and ethnicity category have minimal or no significant impact.

Table 19

Correlations for Low SES Sample Change in GPA (S23-S22)

	Pearson Correlation	Sig. (1-tailed)	N
Change in GPA (S23-S22)	1.000	.	709
GPA S22	-.288	<.001	709
Gender	.016	.338	709
Ethnicity	-.049	.095	709
Grade level	.252	<.001	709
SES	-.011	.388	709
Participated in Sports	.096	.005	709

In Table 19, the relationships between various factors and the change in GPA from Spring 2022 to Spring 2023 (S23-S22) are analyzed for the sample, using Pearson correlation coefficients to determine statistical significance. One key finding is the significant negative correlation between Spring 2022 GPA (GPA S22) and change in GPA ($r = -.288$, $p < .001$). This indicates that students with lower GPAs in Spring 2022 typically experienced greater improvements in GPA by Spring 2023. Additionally, Grade Level displayed a significant positive correlation ($r = .252$, $p < .001$) with GPA change, suggesting that students in higher grades were more likely to have increased GPAs.

Another notable result is the modest but significant positive correlation between sports participation and GPA change ($r = .096$, $p = .005$). This implies that students who participated in sports experienced a slight improvement in their GPAs, though the effect size was small. However, variables such as Gender ($p = .338$), Ethnicity ($p = .095$), and SES ($p = .388$) were not statistically significant, suggesting no strong relationship with GPA changes in this sample.

Table 20

Model Summary for Low SES Sample Change in GPA (S23-S22)

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.40[a]	.16	.15	.61	.16	26.72	5	703	<.001
2	.42[b]	.18	.17	.60	.02	17.86	1	702	<.001

a. Predictors: (Constant), SES, Ethnicity, Gender, Grade level, GPA S22
b. Predictors: (Constant), SES, Ethnicity, Gender, Grade level, GPA S22, Participated in Sports
c. Dependent Variable: Change in GPA (S23-S22)

A regression analysis was conducted to explore the impact of sports participation on GPA fluctuations from the Spring 2022 to Spring 2023 term. The preliminary model incorporated variables like gender, ethnicity, grade level, GPA in Spring 2022, and socioeconomic status (SES). Subsequently, sports participation was included in the model. The original model, which did not include sports participation, explained 16% of the variance in GPA changes. The incorporation of sports participation into the model led to a statistically significant enhancement in the explanatory power, as indicated by a 2% increase in R-squared (refer to Table 20).

The ANOVA results indicate that both models are statistically significant in predicting the change in GPA from S22 to S23 (see Table 21). The addition of 'Participation in Sports' in Model 2 does not drastically change the overall predictability of the model, as indicated by the comparable F-values and significance levels in both models. However, it adds a dimension to the understanding of factors that might influence academic performance.

Table 21

ANOVA for Low SES Sample Change in GPA (S23-S22)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.33	5	9.87	26.72	<.001[b]
	Residual	259.61	703	.37		
	Total	308.94	708			
2	Regression	55.77	6	9.30	25.78	<.001[c]
	Residual	253.17	702	.36		
	Total	308.94	708			

a. Dependent Variable: Change in GPA (S23-S22)
b. Predictors: (Constant), SES, Ethnicity, Gender, Grade level, GPA S22
c. Predictors: (Constant), SES, Ethnicity, Gender, Grade level, GPA S22, Participated in Sports

The regression model included various predictor variables: GPA in Semester S22, Gender, Ethnic Category, Grade Level, Socioeconomic Status (SES), and Participation in Sports. The dependent variable in the analysis was the change in GPA between the two semesters. Participation in Sports was a significant predictor ($p<.001$). The positive relationship suggests that participation in sports is associated with skills or habits that positively influence academic performance (See Table 22).

Table 22

Coefficients for Low SES Sample Change in GPA (S23-S22)

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
2	(Constant)	-1.65	.31		-5.30	<.001		
	GPA S22	-.24	.02	-.34	-9.56	<.001	.92	1.08
	Gender	-.07	.05	-.05	-1.54	.125	.95	1.05
	Ethnicity	-.07	.08	-.03	-.87	.382	.99	1.01
	Grade level	.22	.03	.27	7.87	<.001	.99	1.01
	SES	.04	.06	.03	.73	.467	.99	1.01
	Participated in Sports	.23	.05	.15	4.23	<.001	.97	1.04

a. Dependent Variable: Change in GPA (S23-S22)

For students from low socioeconomic backgrounds engaging in sports, their athletic participation contributes to 21% of the variance in GPA change for each unit of GPA increase. According to Table 22, the most significant factors influencing GPA change were the Spring 2022 GPA, followed by grade level and sports participation. However, factors like Gender, Ethnicity, and Socioeconomic Status did not demonstrate a notable statistical effect on GPA changes in this study. Furthermore, the collinearity diagnostics, including Tolerance and Variance Inflation Factor, revealed no significant multicollinearity issues among the predictors, enhancing the model's credibility.

In summary, this research sheds light on the complex dynamics of academic performance, emphasizing the significant influence of prior academic achievements, grade level progression, and extracurricular activities, particularly sports participation, on semester-to-semester changes in students' GPAs. The study's findings strongly suggest that for low socioeconomic status (SES) students, engaging in athletic extracurricular activities positively contributes to their academic performance. This underscores the critical role of sports participation in enhancing the academic success of students from low SES backgrounds.

Qualitative Data Analysis

The analysis below is based on qualitative data from eight interviews with students from two Central Indiana High Schools. These interviews were recorded and transcribed electronically. Subsequently, the transcriptions were imported into NVIVO software for analysis to begin the coding process. The analysis strived to complete a thorough examination of the students' lived experiences in athletic-based ECAs.

The initial and secondary stages of coding involved first cycle (open coding) and were conducted using NVIVO software to identify major codes and common categories across all participants' responses, following the approach outlined by Corbin & Strauss (2007). Open coding involves labeling data to categorize it into similar groups, a foundational process in qualitative analysis as described by Corbin & Strauss (2007) and Saldana (2009). During the first cycle, I employed various techniques. First, In Vivo coding captured participants' words or phrases that signified codes, and Structural coding organized codes into categories, as per Saldana (2009). To ensure objectivity, my dissertation chair reviewed the coding, helping to reduce potential bias.

The methodology for selecting participants involved identifying students engaged in athletic extracurricular activities and demonstrating outstanding academic performance compared to their peers across two schools. Initially, recruitment materials were dispatched by school administrators to a cohort of 10 students—comprising an equal number of males and females from 11th and 12th grades. At the first institution, consent was obtained from only two students, both female, one each from the 11th and 12th grades. To achieve the desired participant, count of four, it was necessary to reissue recruitment materials to the previously approached male students and to extend the invitation to five additional students. Within this expanded group, two students expressed disinterest, another two consented to participate, and the remainder did not respond.

The process at the second school yielded slightly better results. The same approach was used, and consent forms were returned by three students: two females and one male. Following a subsequent reminder sent to the initial group, another male student submitted his consent form. Unlike the first school, no students explicitly refused participation, although six did not provide any response.

Table 23

Student Profiles

Name	School	Grade	Gender	Lunch Status	Athletics Participation
Stella	1	12	Female	Free	Basketball, Softball
Alice	1	11	Female	Free	Cross Country, Track
Noah	1	12	Male	Reduced	Football, Golf
Jordan	1	11	Male	Free	Football Rugby
Gail	2	11	Female	Free	Cheer
Jack	2	12	Male	Free	Wrestling
Mia	2	11	Female	Free	Cross country, Basketball
Carson	2	12	Male	Reduced	Tennis

To safeguard participant confidentiality, each of the eight students was allocated a pseudonym. This precaution was essential for protecting their privacy and upholding the ethical standards of the research. Information pertaining to the participants, including their assigned pseudonyms, is detailed in Table 23.

All participating students have their GPA calculated on a four-point scale, where an A+ equals a 4.0. However, both schools provide weighted classes such as Honors, Advanced Placement, and Dual Credit courses, which adjust the scale so that an A+ can count as a 5.0. Therefore, this system enables certain students to achieve a GPA exceeding 4.0.

Stella, a twelfth-grade student, resides with her parents and is eligible for a free school lunch program. From an early age, she participated in multiple sports but eventually focused on basketball and softball. Stella maintains a GPA of 3.75.

Alice, an eleventh-grade student, lives with her mother and stepfather, who also meet the criteria for free lunch eligibility. Initially engaged in track and field events, Alice shifted her focus to long-distance running during her freshman year. She currently holds a GPA of 3.41.

Noah, in his final year of high school, lives with his mother and qualifies for a reduced lunch program. Throughout high school, he has been active in football and golf, taking his academic pursuits seriously, which is reflected in his GPA of 4.26.

Jordan, also in the eleventh grade, resides with his grandparents, who are on a fixed income and qualify for free lunch. His mother is incarcerated, and he has no relationship with his father. Jordan, who has been involved in various sports, now focuses on football, and plays rugby with a local club. His GPA is 2.51, a significant improvement from the start of high school.

Gail, an eleventh-grade student who is going to college a year early, lives with her mother, though her father remains involved in her life. She qualifies for free lunch and has been active in cheerleading since middle school, participating in both the fall and winter seasons. Gail's GPA stands at 3.31.

Jack, living with his mother and extended family in the eleventh grade, qualifies for free lunch. He has explored various sports but has dedicated himself to wrestling since starting high school. His current GPA is 2.84.

Mia, an eleventh grader, resides with her grandparents following her parents' demise. Her retired grandparents qualify for free lunch. Mia is involved in cross country and basketball, focusing more on the latter. She excels academically, with a GPA of 4.07.

Carson, a senior whose parents are divorced, has lived with each parent at different times during high school. Eligible for free lunch, he has participated in boys' tennis and served as a student manager for the girls' team. Carson's academic performance has varied, starting slowly but showing increased focus over time, culminating in a GPA of 2.46.

In the initial phase of coding, student responses were categorized based on demographics, employability skills, barriers, and tone. The demographic analysis included grade level, gender, and lunch status. Tone was assessed based on whether students' answers to the questions were positive, negative, or neutral. For barriers, the coding identified potential challenges that students might face in participating in athletics. Four prevalent categories or codes emerged as common barriers: family responsibilities and obstacles, injuries, transportation issues, and job commitments.

My last step of first cycle coding analyzed student responses and carefully further coded to identify employability skills, a modern focus within education emphasizing the non-cognitive or soft skills acquired through schooling. This analysis aligned with my theoretical framework in Chapter Two and concentrated on eight pivotal skills: Adaptability/Coachability, Engagement, Grit/Self-Discipline, Relationships, Self-esteem/Self-Confidence, Stress Management, Time Management, and Work Ethic. These skills are increasingly recognized as essential for academic and professional success, reflecting on student development. Emotional Intelligence (EI), as outlined by Bar-On in 1996, serves as my theoretical framework which includes non-cognitive skills critical for employability, enhancing one's ability to cope with environmental demands. EI encompasses facets such as self-awareness, empathy, and social skills, which are integral for navigating diverse academic and professional environments. Understanding and nurturing these skills can lead to holistic student growth and readiness for future challenges in various spheres of life.

Qualitative Results

Through first and second cycle coding, themes ultimately evolved to answer my final research question. In this section, I'll first describe these coding cycles and define the major codes and categories that resulted from my analysis. Then Research Question #3 will be answered.

First Cycle Coding

After completing the initial phase of coding, major codes began to emerge concerning employability skills. The first notable code was Grit/Self-Discipline. Students shared that through their involvement in athletic extracurricular activities (ECAs), they developed grit. For instance, Jack highlighted the psychological aspect of wrestling, stating, "Wrestling is more about mental toughness than physical strength. It prepares you for the challenges of the real world, enabling you to persevere through difficult job situations and achieve your life goals." This highlights the significant impact of ECAs in developing essential soft skills, like grit, that are highly valued in the workforce.

Figure 2

1st Cycle Coding Matrix

Codes	A : Female	B : Male	C : 11 (Junior)	D : 12 (senior)	E : Free Lunch	F : Reduced Lunch	G : Negative Tone	H : Neutral Tone	I : Positive Tone	Totals
1 : Family duties or obstacles	1	2	2	1	3	0	2	0	1	12
2 : Injury	3	0	2	1	3	0	3	0	1	13
3 : Transportation	1	2	1	2	3	0	3	1	0	13
4 : Working	1	1	1	1	2	0	1	0	1	8
5 : Adaptability or Coachability	5	1	4	2	6	0	1	0	6	25
6 : Engagement	9	7	8	8	15	1	2	13	14	77
7 : Grit or Self-Discipline	12	11	7	16	19	4	6	3	18	96
8 : Relationships	16	12	13	15	25	3	5	2	26	117
9 : Self Esteem-Self Confidence	14	8	7	15	21	1	0	0	22	88
10 : Stress Management	8	13	4	17	14	7	3	3	17	86
11 : Time management	15	12	13	14	23	4	2	7	21	111
12 : Work Ethic	7	6	2	11	11	2	1	2	11	53
Totals	92	75	64	103	145	22	29	31	138	

Note. Matrix of codes from student interviews.

The second major code identified was self-esteem/self-confidence. Numerous students either explicitly stated or suggested that their participation in athletics significantly enhanced their self-confidence. Carson shared:

> The most significant benefit has undoubtedly been a boost in confidence. Initially, I was not particularly skilled in this sport, but now I have been starting varsity throughout my entire senior year. It's been an incredible boost to my self-esteem". This testimony underscores the profound impact that athletic involvement can have on a student's

personal development, particularly in building a stronger sense of self-esteem and self-confidence.

Stress Management was the third most identified code. Alice's experience underscores the effectiveness of sports in developing resilience and stress management skills. Alice explains how sports participation has helped her with stress management:

> I know a lot of the meets we have are pretty big, but we have bigger meets. So I do have a little bit of stress going into those meets, but with those meets, it helps me to learn how to cope with it more. After every meet, you know, I'm like, it really wasn't that bad. I just get used to finding ways to help, manage it.

Engagement in school is one concept that has shown to have a positive impact on a student's academic success. Gail explains that:

> It just makes me honestly feel more involved with my school, which makes me more involved with people, in my school. Then also with the teachers and stuff like that. I am able to talk to who I want and be out there. So, then I'm not afraid to ask a teacher a question. I'm not afraid to come down here and ask my counselor for something. Unlike, some people are just like, hey, like I need help, but I don't want to say anything.

Gail's experience underlines the significant role that active participation and engagement in school activities play in improving communication and confidence in seeking support, both academically and personally.

The last code that showed up multiple times is work ethic. Students who participated in athletic ECAs seem to have a positive view about their work ethic. Alice explains her work ethic and its impact on academics:

> It makes me want to do better in school because I know that I have to sustain a certain grade or at least be higher than an F. I know that, I just need to be doing my work and doing it well so that I do have the better grades.

Another aspect of work ethic is how it pushes a person to work harder in their sport. Carson explained:

> The 1,000-hour rule. You know? You got to, you know, once you hit 1,000 hours of whatever you are doing, if you are focusing and you are working on it, like, you are going to get better. I think that is how I approach tennis and just like that with school too.

These quotes reflect the broad influence of athletic ECAs from students' perspectives, not only enhancing academic dedication but also inspiring greater effort and perseverance in sports, shaping more disciplined and motivated individuals.

Second Cycle Coding

During the second cycle of coding, axial coding was employed to discover relationships among codes, facilitating the identification of broader conceptual categories or themes, as previously mentioned (Corbin & Strauss, 2007; Saldana, 2009). Key categories that surfaced during this phase included the topics of employability skills, positive relationships, and improved academics (see Figure 3). Therefore, these three themes emerged:

1. The most prevalent theme is that students perceived that athletic participation led to an increase in their **employability skills** (such as self-esteem/self-confidence/ability to handle stress, time management skills, work ethic, grit, and self-discipline).

2. The second theme was students feel that athletic participation leads to more **positive relationships** in school.

3. The final major theme that arose was the belief among students that the skills acquired through athletics extend to their **academic enhancement.**

Figure 3

2nd Cycle Coding Matrix

	A : Female	B : Male	C : Positive	D : Negative	E : Neutral	F : 11 (Junior)	G : 12 (senior)	Totals
1 : Employability Skills	33	25	57	7	12	25	33	192
2 : Improved Academics	11	8	20	1	6	6	13	65
3 : Positive Relationships	15	9	26	4	5	12	12	83
Totals	59	42	103	12	23	43	58	

Note: Matrix of codes from student interviews.

These thematic threads were extracted through a thorough reevaluation of the qualitative data and the application of axial coding, which emphasizes understanding code interconnections. Once these three overarching themes were established, all participant interviews were reanalyzed accordingly, with clear definitions provided alongside illustrative excerpts from the interviews. Furthermore, to enhance coding consistency and mitigate potential biases, my dissertation chair conducted a review of the second cycle coding process.

Research question 3. Based on student perceptions, how does participating in athletic-based ECA's change low SES students' non-cognitive skills, such as grit/self-discipline, self-esteem, engagement, and work ethic?

This research question is answered by the three themes that emerged. In the following sections, each theme will be discussed in more detail. Student quotes represent the student voices as they discussed how participating in athletic-based ECA's changed their perceptions about their non-cognitive skills.

Employability Skills. The most prevalent theme is that students perceived that athletic participation led to an increase in their employability skills (such as self-esteem/self-confidence, ability to handle stress, time management skills, work ethic, grit, and self-discipline). Employability skills encompass essential qualities and values necessary for success in any work environment. Often dubbed 'soft' skills, employability skills are transferable and highly prized by employers, constituting a vital component for effective workplace performance.

Self-Confidence/Self-Esteem. Having confidence in oneself can prove to be a valuable skill. Many students experienced a surge in their self-confidence through the conversations. This newfound confidence was evident both in academic settings and in athletics.

According to Carson:

> Yeah, the biggest thing has to be, just a confidence Booster. I was very, uh, very shy in middle school. I think having the ability to go out in a way, like, being forced to interact with people and being forced to, you know, make new friends, like, really opened my eyes. It is easy to make friends whether it is through athletics or just through school. I think it just opened my mind to confidence. I was not that great at this sport in the beginning, and here I am starting varsity the whole my entire senior year Like, that's, uh, it's just a very good confidence booster.

Witnessing how engagement in athletics facilitated his increased sociability and the formation of new friendships provided a significant boost to his self-confidence. This heightened self-assurance translated into enhanced performance during his senior year.

Gail experienced growth and a new self-esteem because of her athletic participation.

According to Gail:

> Honestly, with the responsibility of always attending cheer and then having to make sure you are up in the morning and going to school and turning in all your work, just making sure that you are all organized correctly is big. Something I have gained is that self-respect for myself. That knowing that I got this like we are on top of my stuff. I am very happy that I have gained the fact of responsibility that has shown because when I get into college, I have to rely on myself.

Gail demonstrated that managing the demands of school, sports, and even work has bolstered her self-esteem. This increase has indicated her readiness to tackle responsibilities independently, as she now confidently handles various tasks.

Ability to Handle Stress. Another employability skill that surfaced was the ability to manage stress and time management. Each individual encounters a certain level of stress daily, which can vary based on their activities. It is crucial for individuals to effectively handle stress as it can escalate depending on the circumstances. According to Jack, athletics has taught him how to manage stress:

> I think wrestling really helps you manage stress just because in the matches you rely on yourself not your teammates or anything. It is all you out there and all the work you put in. Being able to know that you can handle that stress with wrestling and being able to eat right and do everything right. It just helps you get used to that stress. I overcome that stress and making everything in life a little

Time Management Skills. Athletic participation requires a lot of time either before or after the school day. This can become a negative if a student is not able to manage their time and get things done for school and other possible obligations. According to Noah:

> I would say stress and, like, time management could be hard. As a kid, it's kind of hard to go to practice every single day for 3 hours. Just getting through that is hard, but I think, when I look in the past, it was very helpful to be in a commitment and have something to do every day.

Work Ethic. Work ethic refers to one's attitude towards work and the dedication they exhibit in completing tasks efficiently and effectively. It encompasses qualities such as reliability, punctuality, professionalism, and a strong commitment to achieving goals. Athletes are expected to put in a maximum effort to improve their skills to improve their performance in competitions. Alice explains:

> I am used to trying to put in, like, all my effort into practice, like, making sure I get the full effect of the workout or the run. I am not just going out there just to be there. I want to put 100% into it, and so that is what I also try to do, in school. I want to put all my effort into trying to do well and get good grades. I tried to put all my effort in, so I know that for me, I want to know that I am doing my best, and I am not just, like, doing it just to do it, but I know that there is going to be a benefit.

Grit/Self-Discipline. Grit and self-discipline are essential qualities that enable individuals to persevere and achieve long-term goals despite challenges and setbacks. Grit entails having passion and perseverance for long-term objectives, while self-discipline involves the ability to control impulses and stay focused on tasks. Together, these attributes form a powerful combination that drives individuals towards success in various aspects of life. Many of the students I interviewed indirectly described self-discipline and grit. According to Mia:

> The whole thing is just knowing how much time I have. So being able to say, okay. Well, If I have practice until this time, I need to be getting some schoolwork done during school because I have that opportunity. And instead of spending those 20 minutes at the end of the class on my phone. I will work on homework for another class.

Mia exemplified self-discipline by strategically managing her time between academics and athletics, maximizing opportunities for productivity.

The concept of Grit was also described in the interviews but not mentioned specifically. A few of the students discussed overcoming injuries, but one stood out. Noah shared:

> Most of my life has been played through sports, and that benefited me a lot. I have made a lot of friends and going through adversity, which will be helpful in the future, like, in my jobs. I would have to say probably, like, not starting if I think I could. I have to work hard and show them that I can and show them that it will be a benefit to the team.

While not explicitly labeled, the concept of grit was evident in Noah's account of persevering through athletic-based adversities, highlighting the valuable lessons learned and their applicability to future endeavors. Additionally, the interviews collectively underscored the positive impact of athletic participation on enhancing students' self-discipline.

Positive Relationships. The second theme was students feel that athletic participation leads to more positive relationships in school. These relationships, formed with both adults and peers, were discussed in a positive light. Students perceived these relationships to have a beneficial impact on their personal and academic growth.

One thing that stood out was how athletics can help a student fit in at a new school. Jordan discussed his experience with peer relationships, “friendships for sure. I did not know anybody when I moved here, and I made tons of friends”. Another positive relationship trend that emerged was friendship with teammates and with adults. Gia explained:

> My cheer teammates are like my family. It just makes me honestly feel more involved with my school, which makes me more involved. Like with people, with my people in my school. Then with the teachers and stuff like that, I can talk to who I want and be out there. So, then I'm not afraid to ask a teacher a question. I'm not afraid to come down here and ask my counselor for something.

Gail’s cheerleading experience has created a second sense of family that has positively impacted her peer relationships and led to positive adult relationships. The role of adults showing they care about their students appears to help cultivate positive relationships. Teachers and especially coaches who have created these relationships have a greater impact than they realize. Jordan became very excited when he explained:

> Just having Coach Trout as a teacher has benefited me so much. I mean, he just knows me. Outside of school also, Coach Richmond does a good job of monitoring everybody's grades. If he sees something that looks off, he will come up and talk to me, keeping me motivated.

Another example of positive adult relationships is explained by Mia:

> Well, within the week, he sends us some messages saying, like, make sure you are locked in with academics and finals. So, he is constantly caring about us within that area. If I say, we are low with a class, like, our grades are a little bit lower. He encourages us to ask for help, or to stay after school.

Finally, positive adult relationships can influence students beyond academics. For example, Carson states:

> Coach Royce Hamill was my coach, for most of my high school year until senior year. He not only implemented a good play style, but also just how to be a good human being on the court. Which in a way I can sometimes respect more than, you know, being a better player. Sometimes the better player is not always a better person. That was something that he really implemented into us.

The second theme to emerge prominently from the interviews was the role of athletic participation in nurturing positive relationships within the school. Students highlighted the significance of these relationships with both peers and adults, attributing them to personal and academic growth. Particularly notable was how athletics facilitated integration into new school environments, as exemplified by Jordan's experience of forging friendships upon relocation. Furthermore, the role of supportive adults, such as teachers and coaches, was underscored in nurturing positive relationships and providing invaluable guidance beyond academic realms, as illustrated by Gail, Mia, and Carson's accounts.

Academic Enhancement. The final major theme that arises is the belief among students that the skills acquired through athletics extend to their academic enhancement. Although there existed a moderately significant positive correlation between sports participation and GPA, the emphasis lies more on students' perceptions regarding the improvement in their academics.

There were many different views on how athletics has helped the students improve their academics other than their GPA. Stella explained that athletics has fostered a competitive side that has transferred to the classroom. Stella stated, “trying to be better than the class average. is definitely something that I hope to do which is a good thing”. Others felt that participating in classroom gave them the motivation to focus on their schoolwork. Jack explained:

> I guess if I honestly wasn't doing sports, like, it just probably would not be the best. But since I participate in it, I got to keep up on the grades. I may want to wrestle in college, so, you know, I got to keep my grades up because colleges look at more than just your sports. Because I am not going to be the best out of everybody.

While these two examples hit the surface level of the impact athletics had on their academic careers, some of the students got much deeper. For example, Mia stated:

> I think the biggest thing is it made me strive to work harder, um, because obviously you have to make good grades to stay in sports. But even with making good grades, it's like you really don't have to make great grades. You can have, you know, just average Cs, and you'd be fine. But, I think the idea of being able to be successful in a sport along with me being successful in my education has really allowed me to feel more confident within myself.

Striving to do better than just what is expected was evident by Mia and similar to what Gia states:

> Well, cheer takes my mind off academics a bit because then I'm surrounded with my family. That's what I consider it. But I use cheer to get me through school. Like, when I think about school cheer, I think about school. School, it is, it just all intertwines. And it, I feel like it does make me a way better student with me being like involved in our school.

The final major theme identified revolves around students' conviction that skills honed through athletics translate to academic improvement, despite the emphasis on perceived enhancement rather than solely on GPA. Students articulated various ways in which athletic engagement positively impacted their academic endeavors, beyond just academic performance metrics. Stella highlighted the cultivation of a competitive drive in the classroom, while others, like Jack, stressed the motivation derived from sports participation to maintain academic standards for future opportunities. Additionally, deeper reflections from students like Mia and Gia underscored how athletics instilled a drive for excellence and provided a supportive framework for academic success.

The second cycle of coding in the study employed axial coding to discern relationships among codes, leading to the identification of broader conceptual categories or themes such as employability skills, positive relationships, and improved academics. These themes emerged through thorough data reevaluation, with clear definitions provided alongside excerpts from participant interviews. Notably, the most prevalent theme highlighted students' perception that athletic participation enhanced their employability skills, including self-confidence, stress management, time management, work ethic, grit, and self-discipline, all essential for success in various settings.

Participants described how athletic engagement boosted their confidence, taught them to manage stress, and instilled a strong work ethic and self-discipline. The study also highlighted how athletics contributed to the development of positive relationships within schools, including connections with peers and supportive figures such as teachers and coaches, which supported both personal and academic growth. Finally, students believed that skills acquired through athletics extended to academic enhancement, demonstrating a deeper understanding of the impact beyond traditional academic metrics like GPA. Overall, the study highlighted the numerous benefits of athletic participation on students' personal development and academic success.

Summary

Chapter Four provided an opportunity to explore how participation in athletic-based-based ECAs benefits students from lower socioeconomic (SES) backgrounds in several dimensions. Initially, quantitative analysis revealed a modest, yet meaningful, positive correlation between students involved in athletic-based ECAs and their counterparts who are not. In addition, the involvement of students from low SES families in these activities showed a minor, but statistically significant, improvement in their GPA. This positive association implies that being active in sports contributes to developing skills or habits that beneficially impact academic achievement.

While the quantitative analysis suggested that students participating in sports saw only a modest increase in their GPAs, characterized by a small effect size, the qualitative data pointed to an important benefit in developing employability skills. Interviews with students also implied some academic improvement, though to what extent varies for each student.

The study explored the influence of engagement in athletic-based extracurricular activities (ECAs) on student academic performance, uncovering a beneficial effect, whether actual or perceived. Evidence for this positive impact came from both quantitative and qualitative research methods. These methods were applied to a select group of students, confirming the findings.

CHAPTER FIVE: CONCLUSIONS

This study was designed to explore the relationship between the participation of students from low socioeconomic status (SES) families, who participated in athletic-based extracurricular activities (ECAs), and their academic performance, measured by GPA. Adopting a mixed methods approach, this study integrated both quantitative and qualitative research methodologies and spanned data collected from the spring semester of 2022 to the spring semester of 2023. Interviews with students were conducted in the fall of 2023.

This chapter begins with a summary of the study and highlights the conclusions drawn from the data collected and analyzed in Chapter Four. The major findings are explained underneath each research question to which they pertain and are then examined through the lens of the research literature collected on this study's topics. Finally, the chapter concludes with implications for action and recommendations for further research.

Purpose of the Study

The primary purpose of this mixed-method study was to compare the relationship between the academic outcomes of low socioeconomic status (SES) students who participate in extracurricular athletic activities (ECAs) to those who do not. To address this relationship during Phase One, I collected data from PowerSchool to provide the necessary information on the following independent variables: participation or nonparticipation in athletic ECAs, gender, and SES status (free vs. reduced). Grade point average (GPA) data represented the dependent variable I examined. A second purpose was to compare the differences between the control group (low SES students who do not participate in athletic ECAs) and the comparison group (low SES students who participate in athletic ECAs). Based on the quantitative research phase that was conducted, I had two predictions for the data analysis results. My first prediction was that the comparison group of students from low SES families who participated in athletic ECAs would have higher GPAs than the control group, and secondly there would be a relationship between GPAs and athletic ECA participation. The last purpose of this study was addressed during Phase Two. I used a qualitative design as I interviewed students from low SES families who participated in athletic ECA's. These interviews provided a more in-depth understanding of students' growth in non-cognitive skill areas (relationships, work ethic, self-esteem/self-confidence, engagement, and grit) through their lived experiences.

Research Questions

Based on past research literature and the purposes of this study, I addressed these research questions:

1. What relationship exists between the GPA averages of all students who participate in athletic-based ECAs compared to all students who do not participate in athletic-based ECAs?
2. What are the differences in GPA between the control group (Low SES students who do not participate in athletic ECAs) and the comparison group (Low SES students who participate in athletic ECAs)?
3. Based on student perceptions, how does participating in athletic-based ECA's change low SES students' non-cognitive skills, such as grit/self-discipline, self-esteem, engagement, and work ethic?

Review of Research Methods

This study aimed to explore the complex relationship between participation in athletic extracurricular activities (ECAs) and academic outcomes, using a mixed-methods approach for a comprehensive analysis. By combining both quantitative and qualitative measures, the research seeks to uncover not just the extent of the relationship but also the underlying reasons behind it, following a sequential explanatory design as recommended by Hoover and Krishnamurti (2010). Initially, quantitative data from the PowerSchool database, which includes information on students' demographics, GPA, socioeconomic status (SES), and athletic participation, were collected and analyzed. Subsequently, the qualitative phase involved interviews with students who participate in ECAs and qualify for free or reduced lunches, specifically targeting those who have performed above the average GPA. This approach aims to provide deeper insights into how athletic involvement impacts students' academic performance, emotional intelligence, and non-cognitive skills, ensuring both aspects of the study are weighted equally (Hafsa, 2019).

Major Findings

The major findings of the research on the relationship between extracurricular athletic participation and academic achievement for low socioeconomic status (SES) students are multifaceted and are summarized as follows:

- Participation in sports showed a small but statistically significant positive relationship with an increase in GPA. Specifically, athletic participation accounts for 7% of a student's change in GPA from spring 2022 to spring 2023, regardless of the students' socioeconomic status.
- For students from low socioeconomic backgrounds engaging in sports, their athletic participation contributes to 21% of the variance in GPA change for each unit of GPA increase.
- Participation in Sports was a significant predictor ($p<.001$). The positive relationship suggests that participation in sports is associated with skills or habits that positively influence academic performance.

- The qualitative data revealed insights into the relationships of athletic extracurricular activities (ECAs) on non-cognitive skills such as grit/self-discipline, self-esteem, engagement, and work ethic among low SES students.
- Interviews with students highlighted that participation in athletics improved their non-cognitive or **employability** skills in meaningful ways. For instance, students reported increases in self-confidence, stress management capabilities, and work ethic due to their engagement in sports.
- The qualitative analysis also indicated that engagement in sports leads to a more profound involvement with the school community, fostering **better relationships** with peers and teachers, and enhancing students' overall school experience.
- The study compared low SES students participating in athletic ECAs with those who do not, revealing noticeable differences in GPA improvement and non-cognitive skills development. Specifically, students involved in athletics tended to show better **academic outcomes** and reported a positive impact on essential life skills.

In essence, the research underscores the positive association between extracurricular athletic participation and both academic achievement and personal development among low SES students. The findings suggest that involvement in sports can be a factor in enhancing academic performance and developing valuable non-cognitive skills, which are instrumental in students' overall growth and future success.

Findings Related to the Literature Review

The findings from this mixed-methods study are presented in this section. A summary of the major findings is compared to the literature base. Some of the literature supports my findings and provides evidence that students from low SES families benefit academically from participation in athletic-based ECAs. The findings are organized by research question, and the quantitative and qualitative data were used to draw richer and robust conclusions. When a finding impacted more than one research question, it was discussed alongside the first research question and then referenced within subsequent research questions.

What relationship exists between the GPA averages of all students who participate in athletic-based ECAs compared to all students who do not participate in athletic-based ECAs?

The first research question was aimed at determining if there was a relationship between the GPA averages of students who participate in athletic-based ECAs versus those that do not. After running multiple inferential tests, participation in athletic-based ECA is associated with a small but statistically significant increase in GPA. This effect accounts for a 7% change in a student's GPA from spring 2022 to spring 2023, and this relationship holds true regardless of the student's socioeconomic status. The research aligns with previous studies (Broh 2002; Eccles & Barber 1999; Rathore et al. 2018) that suggested extracurricular activities, such as athletics, contribute to academic outcomes by helping students develop life skills and increasing their engagement with school.

Numerous studies have highlighted the positive correlation between students' participation in extracurricular activities (ECAs) and their academic achievements. Researchers like Covay & Carbonaro (2010), Gardner et al. (2008), Mahoney, Harris & Eccles (2006), and Morris (2016) have consistently found that involvement in athletic-based ECAs significantly benefits students' academic performance (GPA). Despite some concerns regarding the potential short-term nature of these academic gains, longitudinal research by scholars such as Broh (2002), Fejgin (1994), and Hanson & Kraus (1998, 1999) further supports the notion that engagement in extracurricular activities leads to enduring improvements in grades and test scores, underscoring the lasting academic benefits of such participation.

What are the differences in GPA between the control group (Low SES students who do not participate in athletic ECAs) and the comparison group (Low SES students who participate in athletic ECAs)?

My second research question aimed to examine how participation in athletic-based ECAs impact students from low SES families, in comparison to their low SES peers who do not engage in such activities. Previous studies have highlighted a beneficial link between extracurricular involvement and academic performance among students from higher SES backgrounds. Consistent with this, my findings reveal that involvement in athletic-based ECAs is linked to a modest, yet statistically significant, improvement in GPA for students from low SES families.

Specifically, students from low SES families who engage in sports achieve slightly higher GPAs than their counterparts who do not participate in such ECAs. This positive correlation suggests that participation in athletic-based ECAs can account for some of the observed increases in GPA. For low SES students involved in sports, their athletic engagement explains 21% of the variance in GPA improvement per unit increase in GPA. These findings align with previous research conducted by Covay & Carbonaro (2010), Gardner et al. (2008), Mahoney, Harris & Eccles (2006), Morris, D. (2016) and Morris, E. (2019), further substantiating the relationship between extracurricular participation and academic achievement.

Based on student perceptions, how does participating in athletic-based ECA's change low SES students' non-cognitive skills, such as grit/self-discipline, self-esteem, engagement, and work ethic?

The intent of the third research question was to gain more insight from students' perspectives of the non-cognitive skills they might have gained through their athletic-based ECA participation. The study also uncovered that participation in sports significantly predicts academic performance ($p<.001$), indicating that engaging in sports may be linked to the development of skills or habits that have a positive impact on academic success. Identifying the specific skills acquired through sports participation was challenging, but through interviews with students and qualitative analysis, several key abilities were highlighted. These include self-esteem and self-confidence, stress management, time management, a strong work ethic, grit, and self-discipline. This finding is not new but confirms the findings of research from Holland and Andre, (1987), Meyer and Fletcher, (2007), and Covay & Carbonaro, (2010). Such non-cognitive skills are recognized for their connection to academic achievement, as supported by research from Haghighat & Knifsend (2018), An & Western (2019), and Broh (2002).

Students in my study further elaborated that the skills developed through their involvement in athletic-based extracurricular activities seemed to carry over into their academic environments. They believed these transferable skills had a beneficial impact on their academic performance. The acquisition of non-cognitive skills that contribute to better academic results is in line with findings from previous studies (Broh, 2002; Eccles & Barber, 1999; Eder & Kinney, 1995; Fredericks & Eccles, 2006; Neely & Vaquera, 2017; Rathore et al., 2018).

Although engagement is shown to have a more significant impact on student achievement than self-confidence, it is not the sole factor contributing to the academic benefits of extracurricular participation. Morris (2019) noted the strong correlation between school attendance, classroom engagement, and GPA, which explains some of the variability in student academic performance. This suggests that students who dedicate time to extracurricular activities tend to achieve academic success. That success is likely due to the transfer of engagement and dedication from their activities to their studies, as supported by Haghighat & Knifsend (2018). As previously noted, increased engagement is a precursor to academic success. Participation in ECAs enables students to hone non-cognitive skills that are beneficial both within and beyond the activity, promoting a skill set that is applicable in academic environments (Haghighat & Knifsend, 2018; Morris, D., 2016).

While the connection between positive adult relationships and academic outcomes can be complicated, the impact of non-cognitive skills developed through ECAs on academic performance is undeniable, as noted by Cooper et al. (1999). Research indicates that athletic-based ECAs facilitate the formation of meaningful relationships with adults, such as coaches and teachers. Adult relationships formed during ECAs are similar to those developed in classroom settings and can strengthen students' social networks (Morris, D., 2016). These relationships not only improve social capital but also present an opportunity for students, particularly those from low SES backgrounds, to enhance their emotional intelligence and non-cognitive skills.

My research differs from the conclusions of early studies by Melnick, Sabo, and VanFossen (1992; 1988) and Sabo et al. (1993), which, with limited exceptions, suggested that participation in extracurricular activities (ECAs) does not significantly affect academic achievement. In contrast, more recent investigations, particularly the work of Broh (2002), present a compelling argument for the positive influence of ECAs on academic success. My study reinforces Broh's findings, demonstrating that students who engage in athletic-based ECAs experience beneficial effects on their GPA and acquire non-cognitive skills that contribute to enhanced academic outcomes.

My study challenges the conclusions drawn by Chambers & Schreiber (2004), who applied a zero-sum theoretical framework to assess the impact of extracurricular activities on academic performance. According to this framework, any time students allocate to non-academic activities detracts from their available time for academic pursuits, harming their academic achievement. However, the results of my research contradict this notion. Although involvement in athletic-based extracurricular activities (ECAs) does indeed divert time from academic tasks, it could also equip students with skills that not only compensate for this lost time but also enhance their academic outcomes through the acquisition of non-cognitive skills.

In summary, the research highlights the positive association between extracurricular athletic participation and both academic achievement and personal development among low SES students. The findings suggest that involvement in sports can be a factor in enhancing academic performance and developing valuable non-cognitive skills, which are instrumental in students' overall growth and future success. Thus, ECAs emerge as one possibility to help close educational gaps and the development of essential skills among students from low SES backgrounds.

Connection to the Theoretical Framework of Emotional Intelligence

This study extends the framework of the Bar-On Model of Emotional Intelligence, which emphasizes the role of emotional and social competencies in promoting overall success and well-being. By examining the relationship of sports participation on the development of non-cognitive skills, my study revealed a perceived improvement in students' emotional intelligence. Testimonies from students highlight improvements in self-esteem, stress management, time management, work ethic, perseverance, and self-discipline. Furthermore, the research showcases the wide-ranging advantages of engaging in athletic extracurricular activities, particularly for students from low SES backgrounds, underscoring not only academic benefits but also growth in emotional intelligence.

This research contributes insights into the impact of athletic-based ECAs on student success, while also demonstrating the practical application of the Bar-On Model of Emotional Intelligence in educational contexts. Dhani and Sharma (2016) emphasized that Reuven Bar-On's model integrates elements of emotional intelligence and personality traits to evaluate their collective influence on an individual's well-being. This approach is further elaborated by Di Fabio & Saklofske (2014), who classify emotional intelligence into key competencies such as interpersonal and intrapersonal skills, adaptability, and mood management. Broh (2002) outlined the indirect academic advantages of participating in extracurricular activities. These benefits encompass the development of life skills like emotional intelligence, better integration with academic peers, and more active involvement in the school community. Together, these factors contribute to the building of social capital and reinforce commitment to school norms.

Implications for Action

This mixed-methods study's findings advocate for the sustained and broadened implementation of athletic-based extracurricular activities (ECAs). The evidence underscores the beneficial effects of participating in such ECAs, demonstrating that involvement boosts non-cognitive skills and academic performance, regardless of the team's success. Furthermore, this participation enhances student engagement, which is another factor that positively influences academic achievement.

It is crucial for schools to identify and dismantle any obstacles preventing students, particularly those from low socioeconomic status (SES) backgrounds, from engaging in athletic-based ECAs. This challenge exceeds the capacity of schools alone, necessitating community-wide support. By communicating the academic advantages of athletic-based ECAs to key community stakeholders, innovative strategies can be devised to remove barriers to participation.

Additionally, the study reveals the significant role of positive relationships in enhancing student experiences. It is essential for schools to recognize the impact of these relationships and ensure every student has at least one adult in the school with whom they share a positive bond. This foundational relationship can catalyze further positive interactions and engagement, contributing to the broader theme that positive relationships and increased engagement are key to boosting student academic success and overall well-being.

Finally, this study highlights the pivotal role coaches can play in enhancing students' academic outcomes. Beyond merely ensuring athletes meet the basic academic requirements for participation, coaches have a unique opportunity to positively impact their students' educational journeys. By actively fostering the development of essential non-cognitive skills—such as resilience, teamwork, and discipline—coaches support their athletes in both athletic and academic arenas. Implementing strategies like study sessions, tracking academic progress, establishing goals, and teaching effective time management practices can significantly benefit students. These critical skills not only contribute to students' success in high school but also prepare them with qualities that are in high demand in the workforce.

Although more research is needed to identify strategies coaches can use to enhance students' academic outcomes, participation in athletics promotes the growth of non-cognitive skills. Implementing targeted training programs for athletic departments aimed at further developing these skills could lead to improved academic achievements for students. This approach suggests a promising direction for combining sports with academic support initiatives.

Limitations of the Study

All research is prone to limitation, and my research is no exception. There were five important limitations to consider. First, the sample suffered from a lack of diversity. The two schools that agreed to participate are in geographically similar regions, hosting around 1,300 to 1,400 students. In addition, these schools exhibit a homogeneous demographic with minimal diversity, leading to a study predominantly involving white students from rural environments.

Secondly, the number of low SES students in the sample was smaller than expected. The initial sample was 929 low SES students (745 on free lunch, 184 on reduced lunch) out of 2,711 students across the two high schools under study. However, after excluding any student with incomplete or missing data, the sample size was reduced further to 709 students. Although this sample size is adequate for examining the group of interest, a larger pool of students could have potentially revealed more distinct relationships.

Thirdly, the collection of comprehensive student data was affected by the disruption caused by the COVID-19 pandemic, making it impossible for me to gather cumulative GPA information on students. During the pandemic, principals of both buildings mentioned they encouraged teachers to be lenient in their academic evaluations of students. This led to students receiving higher grades than usual, potentially inflating their GPAs. Consequently, my study concentrated on academic outcomes from Spring 2022 to Spring 2023, the first three semesters after schools were no longer under COVID protocols, as confirmed by both principals.

Fourth, the focus was narrowed to athletic extracurricular activities (ECAs) instead of encompassing all ECAs. While schools provide a wide range of ECAs, focusing on athletic ones allowed for an examination of the category that attracts participation from approximately 7.8

million students in school-based sports across the United States annually, as noted by Post et al. (2018).

Lastly, numerous independent variables could have been explored. By incorporating only athletic participation and socioeconomic status (SES), the study addresses a portion of the potential factors. With a larger study, it would be possible to analyze data by additional categories such as gender, grade level, ethnicity, or specific coaches who require study tables. While the study's emphasis on GPA and athletic participation narrows its scope, these are significant variables that receive attention in numerous other research efforts.

Finally, a substantial portion of student data had to be excluded due to missing variables. Initially, my dataset contained 993 low socioeconomic status (SES) students. However, after filtering out those with one or more missing variables, only 709 students remained in my sample. Similar to prior research, datasets concentrating on low SES demographics often encounter limitations stemming from missing data. In this instance, approximately 29% of the target population was lost.

Recommendations for Future Research

The research presented lays the groundwork for future studies, suggesting pathways for change to enhance outcomes. Each researcher has limitations in their study, and as I reviewed this work, I noted ways to improve the research. Overall, there were some themes that emerged for researchers to consider when starting their own study in the area of ECAs and students' school success, such as longitudinal designs, surveys, school size, diversity, and coaches.

Longitudinal Designs

The first consideration to enhance research on the impact of extracurricular activities on students' academic success involves extending the duration of the studies. Currently, many studies focus on relatively brief periods. Scholars advocate for developing more longitudinal studies to delve deeper into this area (Broh, 2002; Chambers & Schreiber, 2004; Holland & Andre, 1987; Neely and Vaquera, 2017). By undertaking longer-term research, it becomes possible to identify the sustained advantages that high school students gain from engaging in extracurricular activities. There's an underlying hypothesis that extracurricular involvement yields both immediate and enduring benefits for students. Questions remain about whether the academic improvements seen during high school carry over into college, or if the benefits of extracurricular activities are contingent upon continued participation beyond high school. While some studies have begun to explore these questions, future research should further investigate their long-term effects on high school students.

Survey Methods

Conducting a survey might have provided valuable insights into how sports participation influences students' employability skills. Distributing a survey to all student athletes could have offered a more nuanced understanding of the connection between athletic involvement and the development of skills valuable in the workforce. Analyzing the survey results could have elucidated the specific relationship between participation in sports and employability skills. Also, a comparison could have been made between the responses of athletes from low SES families to those with higher SES households.

School Size

Another consideration would be to expand the study to encompass a broader range of schools. Securing permission from both larger and smaller schools could have enhanced the depth of understanding. It raises questions about how the dynamics between athletic involvement and academic achievements manifest in smaller schools, which may offer fewer sports options yet potentially allow more students to participate. Conversely, larger schools provide a wider variety of sports, but the competitive nature and larger student body might limit individual participation opportunities. Investigating the impact of school size on the relationship between sports participation and academic success could introduce an intriguing factor into the study.

Diversity

Fourth, when selecting schools, researchers might recruit willing participants with more ethnic diversity. The two schools that agreed to participate were very similar and both lacked diversity. Examining the participation of diverse ethnic groups in athletics more closely could illuminate the dynamics of the relationships between GPA and athletic participation across different ethnicities.

Further Hierarchical Regression

Additionally, it would have been beneficial to disaggregate the data by school for a deeper analysis of each institution concerning the three research questions, through adding more models during hierarchical regression. This approach would have facilitated a deeper understanding of the connection between athletic-based extracurricular activities (ECAs) and academic outcomes within each school. Conducting a thorough investigation by adding models for coaches, individual sports, and multi-sport athletes could have offered further insights. Such a more comprehensive analysis could have provided meaningful understandings regarding the correlation between athletic ECAs and student outcomes based on other independent variables that might have impacted the results.

For example, conducting a distinct study on the methods coaches employ to promote academic success within their programs and the relationships these coaches develop with their student athletes could prove invaluable. Given the variety of coaching styles, it would be fascinating to explore any correlations between coaching variables and the academic achievements of their athletes. Preliminary discussions with students revealed diverse approaches: some coaches mandate study sessions, others conduct grade checks, while a few simply emphasize the importance of academics during practice. This raises the question of whether there are specific strategies that coaches could adopt to improve the educational results for their athletes.

Summary

This study explored how athletic-based extracurricular activities (ECAs) influence the academic performance and non-cognitive skill development of students from low socioeconomic status (SES) backgrounds. Utilizing a mixed-methods approach, it provided evidence of the positive effects of athletic participation on students' GPAs and non-cognitive skills, such as self-discipline, self-esteem, engagement, and work ethic. The quantitative analysis reveals a significant correlation between athletic involvement and GPA improvement, especially among low SES students, indicating that sports participation can play a role in promoting academic success and personal development.

Building on existing literature, this study emphasizes the non-cognitive skill development with athletic ECAs, aligning with the Bar-On Model of Emotional Intelligence, and highlighting the broader educational benefits of such participation. Educators and schools should support and expand access to athletic ECAs, especially for low SES students, emphasizing the role of coaches in nurturing students' personal and academic development. In sum, the findings advocate for a reevaluation of extracurricular priorities to ensure a supportive and inclusive educational environment that leverages the full potential of athletic participation in student development.

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Appendix A Student Interview Protocol Form

Date: _______________

Interviewer: Michael Peo

Interviewee (Name): ____________________________________

Post Interview Comments or Leads:
____

Introductory Protocol

Thank you very much for agreeing to meet with me. In order to be able to use active listening and also capture all of the details, I would like to audiotape our conversation. After the interview is transcribed, the audio tape will be deleted. In addition, you must sign a form devised to meet the human subject requirements. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary, and you may stop at any time if you feel uncomfortable, and (3) I do not intend to inflict any harm. Once again, thank you very much for being willing to participate.

I value your time, and therefore, I have planned for this interview to not last longer than one hour. I do have several questions that I would like to ask you during this time. If for some reason, our time is running out, I might need to interrupt you to stay within the hour and complete the line of questioning.

Introduction

You have been selected to be a part of this interview since you are a student who participates in athletic ECAs and has a supported lunch status. I am curious if participating in athletic ECAs has impacted your academic outcomes. I am also curious if athletic ECA participation has made a difference in your self-esteem, motivation, or grit.

Core Questions for ALL Interviews

1. Please provide me an overview of the athletic ECAs you have been a part of?

2. How have you been able to manage your school and athletic ECA demands?

3. What benefits have you gained because you participated in Athletic ECAs?

(Prompt to get more detail regarding issues of self-esteem, motivation, and grit. For example, what values did you gain from that experience that serve you today?) (Bar-On Theory- interpersonal skills)

4. What barriers did you had to overcome to participate in athletic ECAs? If so, can you explain what they were and how you overcame them? Bar-On Theory (interpersonal skills- adaptability)

5. How has ECA participation helped you handle stress or pressure? For example, have you needed to compete for playing time? Bar-On Theory (interpersonal skills- motivation and grit)

6. In what ways has participating in athletics influence your academic success?

7. What have you gained through athletic participation that will help you succeed in life? Prompt non-cognitive skills. (Bar-On Theory- Interpersonal and Intrapersonal skills)

Ending Protocol

Thank you very much for your time and for sharing your thoughts with me. I might need to contact you again in order to clarify information or ask some additional questions.

Appendix B Complete Table 12

Table 12 Full

Coefficients Spring 2022 to Spring 2023

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	-.26	.17		-1.51	.131		
	Spring 2022	-.38	.01	-.50	-25.45	<.001	.92	1.08
	Gender	-.13	.03	-.09	-4.49	<.001	.97	1.03
	Ethnicity	-.09	.06	-.03	-1.55	.120	1.00	1.00
	Grade level	.13	.02	.16	8.19	<.001	.94	1.06
	Free vs Reduced	.15	.06	.05	2.65	.008	.87	1.15
	Free vs Paid	.28	.03	.18	8.55	<.001	.78	1.27
2	(Constant)	-.17	.17		-.98	.329		
	Spring 2022	-.39	.01	-.52	-26.35	<.001	.89	1.12
	Gender	-.15	.03	-.10	-5.26	<.001	.96	1.04
	Ethnicity	-.09	.06	-.03	-1.59	.112	1.00	1.00
	Grade level	.12	.02	.15	7.83	<.001	.94	1.07
	Free vs Reduced	.15	.06	.05	2.68	.007	.87	1.15
	Free vs Paid	.25	.03	.16	7.70	<.001	.77	1.30
	Participated in Sports during Fall 2022	.22	.04	.12	6.09	<.001	.91	1.10

a. Dependent Variable: Change in GPA (F22-S22)

Appendix C Complete Table 17

Table 17

Coefficients Change in GPA (S23-S22)

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-.29	.17		-1.73	.084		
	Spring 2022	-.40	.01	-.54	-28.15	<.001	.92	1.08
	Gender	-.11	.03	-.07	-4.05	<.001	.97	1.03
	Ethnicity	-.09	.05	-.03	-1.76	.079	1.00	1.00
	Grade level	.14	.02	.18	9.46	<.001	.94	1.06
	Free vs Reduced	.10	.05	.04	1.87	.062	.87	1.15
	Free vs Paid	.35	.03	.23	11.08	<.001	.78	1.27
2	(Constant)	-.17	.17		-1.03	.302		
	Spring 2022	-.42	.01	-.56	-29.27	<.001	.88	1.13
	Gender	-.13	.03	-.09	-4.80	<.001	.96	1.04
	Ethnicity	-.11	.05	-.04	-2.00	.046	1.00	1.00
	Grade level	.13	.01	.17	8.91	<.001	.93	1.07
	Free vs Reduced	.10	.05	.03	1.80	.072	.87	1.15
	Free vs Paid	.30	.03	.20	9.49	<.001	.75	1.33
	Participated in Sports	.21	.03	.13	6.87	<.001	.86	1.16

a. Dependent Variable: Change in GPA (S23-S22)

Appendix D Complete Table 19

Table 19 Full

Correlations for low SES sample Change in GPA (S23-S22

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1.66	.31		-5.28	<.001		
	GPA S22	-.22	.02	-.32	-8.89	<.001	.95	1.05
	Gender	-.05	.05	-.04	-1.09	.275	.96	1.04
	Ethnicity	-.06	.08	-.03	-.73	.464	1.00	1.00
	Grade level	.22	.03	.27	7.82	<.001	.99	1.01
	SES	.05	.06	.03	.79	.427	.99	1.01
2	(Constant)	-1.65	.31		-5.30	<.001		
	GPA S22	-.24	.02	-.34	-9.56	<.001	.92	1.08
	Gender	-.07	.05	-.05	-1.54	.125	.95	1.05
	Ethnicity	-.07	.08	-.03	-.87	.382	.99	1.01
	Grade level	.22	.03	.27	7.87	<.001	.99	1.01
	SES	.04	.06	.03	.73	.467	.99	1.01
	Participated in Sports	.23	.05	.15	4.23	<.001	.97	1.04

a. Dependent Variable: Change in GPA (S23-S22)