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Students with Disabilities and Participation in Extracurricular Activities

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SHAWNEE STATE UNIVERSITY

Students with Disabilities and Participation in Extracurricular Activities

A Thesis

By

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Department of Mathematical Sciences

Submitted in partial fulfillment of the requirements

for the degree of

Master of Science, Mathematics

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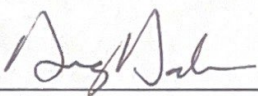
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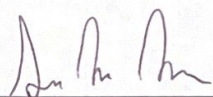
Graduate Director, Date

The thesis entitled 'Students with Disabilities and Participation in Extracurricular Activities' presented by Stephanie M Miller, a candidate for the degree of Master of Science in Mathematics, has been approved and is worthy of acceptance.

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ABSTRACT

The role of secondary educators is to produce successful students, not only academically but developmentally. Educators must equip students with the skills and habits they need to transition into adulthood smoothly. Instructors are constantly looking at ways to produce student achievement, but unfortunately, not all students graduate on time, and, even worse, some students drop out of high school. One group of students who fall into this at-risk category is those with disabilities. Students with disabilities tend to have lower academic achievement, more chronic absences, and more behavior misconducts than students without disabilities.

This study examined the effect participation in extracurricular activities had on the variables of academic success, number of absences, and discipline referrals. Multiple regression, ANOVA, and independent t-tests were used to examine this study's four main research questions. The researcher found statistical evidence that students with disabilities involved in extracurricular activities had fewer absences than those who did not participate. Statistical evidence was not found between involvement in extracurricular activities and the number of discipline referrals. Results also showed that, although not statistically significant, the mean Reading SOL and Math SOL scores of students with disabilities who participated in extracurricular activities were higher when compared to their uninvolved peers.

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CHAPTER I: INTRODUCTION

Introductory Paragraph

In the world of education, standardized testing is a way to compare students' performance across a broad region. Many states have adopted their own high-stakes exams to assess students, and educators are tasked with preparing their students for these tests. In general, students with disabilities repeatedly have lower passing scores on standardized tests than their non-disabled peers. In three consecutive school years, 2016-2017, 2017-2018, and 2018-2019, Virginia students with disabilities passed the mathematics portion of the Virginia Standards of Learning end-of-course assessment at a mere 48%, 47%, and 55%, respectively. Each yearly percentage is lower than any other subcategory of students, including race, gender, socioeconomic status, and English language learners (Virginia Department of Education [VDOE], 2021). While students with disabilities may be getting the academic support they need in the classroom, they are still not academically measuring up to their non-disabled peers. As a result, it is crucial that a more profound understanding goes into what makes students with disabilities successful learners.

Over the years, there have been multiple studies on students' academic success who participate in extracurricular activities. Most of these studies focus on race, gender, and socioeconomic status (Broh, 2002; Freeman, 2017; Froehlich, 2020); however, there is minimal research examining students with disabilities participating in extracurricular activities. These aforementioned studies have shown statistical evidence that extracurricular activities positively affect students' academic performance. Perhaps participation in extracurricular activities will have the same effect on students with disabilities. The overarching goal of this study is to examine the relationship between participation in extracurricular activities and academic achievement for students with disabilities.

Background of the Problem

Standardized testing has been around for over 150 years (National Education Association [NEA], 2020). In 2001, with the No Child Left Behind Act, schools were required to administer standardized testing to hold students and educators accountable. The No Child Left Behind Act was hopeful to keep American schools competitive and increase the success of certain lower-performing groups. Education advisors realized that the uniform accountability approach to education was not ideal, and in 2015, the Every Student Succeeds Act was approved. This law aimed to reduce the standardized testing required in public schools and provide equal opportunities for disadvantaged students (NEA, 2020).

Within the last two decades, legislation has aimed to increase the academic success of underachieving students, particularly students with disabilities; however, these learners still fall behind in the nationwide graduation percentage. The National Center for Educational Statistics (2020) published the national graduation rate for students in the 2018-2019 academic school year at 85.8%. In comparison, students with disabilities graduated at a rate of 68.2%. This vast difference in graduation percentages requires a more in-depth look at what variables can ensure the academic success of students with disabilities.

Discipline is one primary concern that arises for students with disabilities. Across racial groups nationwide, students with disabilities receive out-of-school suspension (OSS) 13% of the time compared to their non-disabled peers at 7% (Losen & Gillespie 2012). This almost double suspension rate is alarming, and the lack of instructional seat time could be detrimental to the academic success of students with disabilities. Specific categories of disabilities are more likely to be referred for behavior infractions compared to others. Research finds that students with other health impairments (OHI) and emotional disturbances (ED) are the most likely to be

referred (Anderson, 2020). Cassaday (2000) notes that students with behavior and attention disorders, which often fall under ED and OHI, have difficulty processing social cues, which could cause them to react inappropriately to scenarios. While no one can prepare students for every social encounter, extracurricular activities may be the key to reducing discipline referrals among students with disabilities. Extracurricular activities allow students to practice social interaction skills in the least restrictive environment. Extracurricular activities also give students access to peer groups to which they would not readily have access to and expose them to acceptable norms (Froehlich, 2020).

Another benefit of extracurricular activities is the increase in academic performance (Broh, 2002; Freeman, 2017; Froehlich, 2020). Broh's (2002) study examined the relationship between participation in interscholastic sports and students' grades in mathematics and reading. This study found statistical evidence that students playing interscholastic sports performed better academically than those who did not participate. Froehlich (2020) also studied the effects of interscholastic athletic participation on academic success; however, the population focused on students with low socioeconomic status. This research indicated that students in poverty who participate in interscholastic programs have a statistically significant higher grade point average (GPA) than those who do not participate. Freeman's (2017) research involved a broader spectrum of extracurricular activities, including interscholastic sports, academic clubs, and nonacademic programs. Freeman (2017) noticed a positive correlation between participation in extracurricular activities in both GPA and ACT scores. This study also looked at students of low socioeconomic status, who are typically underachieving learners. Freeman's (2017) study showed statistical evidence that students on free and reduced lunch status had higher ACT scores

and GPAs when involved in extracurricular activities. The results from these studies indicate the positive effects of extracurricular activities on students with disabilities.

While student participation in extracurricular activities may seem overwhelmingly positive, some research has produced conflicting results. One study did not show a significant difference in students' academic success when looking at the amount of time, in hours, students spent in extracurricular activities (Berkley, 2021). Cassaday (2000) also noted that some students do not have access to transportation or must care for younger siblings, making involvement in extracurricular activities impossible. There has also been some supposition as to whether overscheduling students in extracurricular activities is detrimental to student success (Mahoney et al., 2006).

Several studies have discussed whether participation in extracurricular activities benefits students' academic achievement, but little research has focused on the relationship between extracurricular activities and students with disabilities. This study would like to investigate the gap in research and, in addition, would like to examine which of the thirteen subcategories of students with disabilities would benefit the most academically from participation in extracurricular activities.

Statement of the Problem

This study aims to focus on examining the relationship between participation in extracurricular activities and academic achievement among students with disabilities. Prior studies conducted focused on the relationships between participation in extracurricular activities and academic success among race, gender, and socioeconomic status; however, there has been limited research on the population of students with disabilities. It is recognized that students with disabilities often have lower standardized test scores and graduation rates compared to their

non-disabled peers. With the number of IEPs on the rise (U.S. Department of Education National Center for Education Statistics [USDOE], 2021), it is imperative that educators, counselors, and parents gain a better understanding of what makes students with disabilities perform better academically. Perhaps extracurricular activities will assist in bridging the learning gap deficit for students with disabilities, giving them the tools they need to become successful learners.

Purpose of the Study

This quantitative research aims to examine the relationship between participation in extracurricular activities and academic achievement among students with disabilities. Additionally, this study will examine the relationship extracurricular activities have on attendance rates and discipline referrals of students with disabilities.

This study will occur at Thomas Dale High School, one of the largest schools in Chesterfield County, Virginia, with about 2500 students. Thomas Dale High School has approximately 340 students with Individualized Education Programs (IEPs). This research focuses on the non-self-contained students with IEPs whose disability interferes with their daily learning. This study intends to use as many of these special education students as possible.

The independent variables included in this study are a student's IEP disability classification, behavior in the form of the number of discipline referrals, and attendance by the number of absences. The students with disabilities will then be placed into categories of participation in extracurricular activities classified as either school-based, community-based, both, or none. Academic achievement will be measured by a student's math or reading scores on the Virginia Standards of Learning end-of-course assessment.

Significance of the Study

This study is significant in determining the relationship between students with disabilities' involvement in extracurricular activities and their academic achievement, number of discipline referrals, and attendance rates. If students with disabilities involved in extracurricular activities prove to be more successful in these areas, counselors and case managers would highly encourage student participation and involvement. In addition, parents may be more willing to utilize community programs to help strengthen and develop their child's potential. As a result, students with disabilities could bridge the achievement deficit gap and become more successful learners.

Primary Research Questions

There are four main research questions this study will attempt to answer:

- Question 1:** Is participation in types of extracurricular activities (school-based, community-based, both, or none), disability type, number of discipline referrals, and number of absences statistically significant predictors of academic achievement for students with disabilities?
- Question 2:** Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of missed school days among students with disabilities?
- Question 3:** Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of discipline referrals among students with disabilities?

Question 4: Is there a statistically significant relationship in academic achievement between students with disabilities involved in school-based extracurricular activities versus their peers involved in community-based extracurricular activities?

Hypotheses

Hypothesis 1: Participation in types of extracurricular activities (school-based, community-based, both, none), type of disability, number of discipline referrals, and number of absences are statistically significant predictors of academic achievement for students with disabilities. Specifically, students involved in community-based and school-based activities, with fewer discipline referrals and absences, are academically more successful.

Hypothesis 2: A significant relationship exists between students with disabilities participating in extracurricular activities and their overall attendance. Specifically, students with disabilities involved in extracurricular activities will have better attendance rates than students with disabilities who are not involved in extracurricular activities.

Hypothesis 3: A significant relationship exists between students with disabilities participating in extracurricular activities and their overall behavior. Specifically, students with disabilities who are involved in extracurricular activities will have fewer written referrals than students with disabilities who are not involved in extracurricular activities.

Hypothesis 4: There is a significant relationship in academic achievement between students with disabilities involved in school-based extracurricular

activities versus their peers involved in community-based extracurricular activities. Specifically, students with disabilities involved in school-based extracurricular activities will have better academic success than students with disabilities who are involved in community-based extracurricular activities.

Research Design

The study's participants are the special education students at Thomas Dale High School in the inclusion setting, classified by their IEPs. This study will implement hypothesis testing procedures. Data will be collected and analyzed to test the hypothesis of the relationship between participation in extracurricular activities and academic achievement among students with disabilities.

Theoretical Framework

There are many theories as to why extracurricular activities positively impact students. One such theory is the Ecological Systems Theory, which holds that both a child's immediate and surrounding environment interact to scaffold development. In Bronfenbrenner's Ecological Systems Theory, five interrelated structures influence a child's development. The innermost layer of Bronfenbrenner's model is the microsystem, which includes influencing factors that have direct contact with the child in their immediate environment. The relationships fostered in the microsystem, such as those with parents, teachers, and peers, are critical in the developmental process. The next level, known as the mesosystem, involves the interactions between a child's microsystem. Types of these interactions are the communication between parents and teachers, and the quality of these interconnected relationships can either positively or negatively affect a

child's development. The third tier of Bronfenbrenner's model is the exosystem. The exosystem contains the social structures that indirectly influence a child's development, such as neighborhoods and parents' workplaces. The fourth level focuses on how cultural and economic contexts, such as ethnicity and socioeconomic status, affect a child's development. The final layer, the chronosystem, consists of all the environmental changes and transitions that occur over a child's life. Throughout time, these events influence a child's development.

Since extracurricular activities foster a network of connections within Bronfenbrenner's model, the Ecological Systems Theory is an ideal theoretical framework for this study. Extracurricular activities provide students access to a network of adults outside family members. These positive adult interactions may motivate and encourage students to behave appropriately in the classroom and perform better academically (Broh, 2002). In addition, encouraging adult relationships could diminish any negative environmental factors students are susceptible to in their immediate surroundings (Froehlich, 2020). Extracurricular activities also allow a student's parents to interact with the teachers, coaches, and activity advisors who serve as mentors to their students. Extracurricular activities significantly increase social connections between students' parents and school (Broh, 2002). According to the Ecological Systems Theory, a supportive parent-teacher relationship positively affects a child's development (Guy-Evans, 2020).

As stated previously, students with disabilities fall academically behind their non-disabled peers. Bronfenbrenner's Ecological Systems Theory states that positive interactions between the five tiers promote success in a child's development. Since extracurricular activities are intertwined within Bronfenbrenner's model, participation may provide students with disabilities the intervention tool to build positive social relationships and foster development.

This positive development and greater social connection could translate to academic success in the classroom.

Assumptions, Limitations, and Scope

It is assumed that students will put forth their best effort on the mathematics and reading portion of the Virginia SOL. In Chesterfield County, students with IEPs are only required to score 375 on the SOL to receive the high school graduation credit compared to their non-disabled peers, who must score 400.

This study may be limited to the repercussions of COVID-19 and the lack of school stability over the last two years. Students in Chesterfield County were all granted passing grades and SOL waivers in the 2019-2020 school year due to school closures in March 2020. In addition, a majority of the 2020-2021 school year in Chesterfield County was virtual. Once the in-person learning option was available in February 2021, only 25% of students elected to come back in person, significantly reducing the number of students who took the SOL at the end of the year. Because of the instability of the classroom environment in the 2020-2021 school year, the SOL cut score was reduced to 375. Students with disabilities were only required to score a 350 for graduation requirements. Furthermore, COVID-19 put many school sports and clubs on hold until the Spring of 2021. It is noted that the enrollment of school-sponsored sports, clubs, and activities have been down in comparison to years prior to COVID-19.

The scope and delimitations of this research have been narrowed to Thomas Dale High School, the largest of eleven high schools in Chesterfield County, Virginia. Thomas Dale High School has two campuses, one building for ninth graders and the other for grades 10-12. The combined campuses house around 2500 students. Of these students, 37% are White, 35% are Black, 20% are Hispanic, 5% are two or more races, and 3% are Asian/Pacific Islander.

Currently, 34% of students are from low-income families, and all students receive free breakfast and lunch. Roughly 18% of students have an IEP or 504 plan. This study can be generalized to other suburban schools with similar demographics.

Definition of Terms

The following are terms used throughout this study that are defined for clarity and understanding.

1. Extracurricular Activities: Any structured club, sport, or organization a student may be involved in, either a school-sponsored or community-based activity.
2. Virginia Standards of Learning (SOLs) Test: The Virginia standardized assessment consists of 35-50 questions that measure content knowledge, scientific and mathematical processes, reasoning, and critical thinking skills (VDOE, 2021).
3. Mathematics Portion of SOL: Students must take one math SOL in high school and pass one high school math SOL for graduation requirements. The math SOL in reference may be the Algebra I, Geometry, or Algebra II SOL.
4. Reading Portion of SOL: Students must take one reading SOL in high school and pass for graduation requirements. The reading SOL is typically taken in a student's junior year.
5. Academic Success: Academic success is determined by the student's score on the mathematics or reading portion of the Virginia SOL. The scores range from 0-600, where a score of 0-399 fails to meet the standards, 400-499 is passing with acceptable proficiency, and 500-600 is passing with advanced proficiency.
6. Students with Disabilities: Learners who fall into the category of needing special education services. For a student to qualify for special education services, their

impairment must adversely affect the child's academic performance. The Individuals with Disabilities Education Act (IDEA) covers the following thirteen categories of disabilities: specific learning disability (SLD), other health impairment (OHI), autism, emotional disturbance (ED), hearing impairment, deafness, visual impairment, deaf-blindness, speech/language impairment, traumatic brain injury (TBI), orthopedic impairment, multiple disabilities (MD), and intellectual disability. Attention Deficit Hyperactivity Disorder (ADHD) could fall under the category of OHI (Lee, n.d.).

7. Social Capital: The network acquired from social interactions with groups that share the same norms and values (Plagens, 2011).

Summary

Chapter One introduced the problem at hand. With the number of IEPs on the rise and students with disabilities constantly underperforming compared to their non-disabled peers, steps must be taken to ensure these students are successful learners. Chapter Two will review literature articles on the relationship between students' participation in extracurricular activities and academic achievement. Chapter Three will discuss the methodology of the research design. Chapter Four will publish the study results, and Chapter Five will provide a summary and discussion.

CHAPTER II: LITERATURE REVIEW

Introduction

Over the last few decades, extensive research has been conducted on extracurricular activities' effects on student success. Many aspects of this relationship have been investigated, including academic achievement, behavioral influence, and social relationships. With the number of students with disabilities on the rise (USDOE, 2021), it is critical to examine the role extracurricular activities have on the academic achievement of these at-risk students. If extracurricular activities positively affect traditional students, perhaps students with disabilities would also reap the benefits of involvement. Most research agrees that extracurricular activities promote academic success, produce positive social norms, reduce risky behavior, decrease school dropout rates, and increase postsecondary enrollment (Cassaday, 2000; Broh, 2002; Eccles et al., 2003; Freeman, 2017; Mahoney, 2014; Palmer et al., 2017). In this literature review, a brief history of special education is examined, along with the benefits of participation in extracurricular activities.

History of Special Education

Looking back to 50 years ago, special education and the rights of students with disabilities have improved exponentially. Before the Rehabilitation Act of 1973, civil rights and required accommodations for students with disabilities were virtually nonexistent. It was often the case that schools denied students with disabilities the opportunities to learn in the same buildings and classrooms as traditional students. In 1975, the Education for All Handicapped Children Act (EHA) protected the rights of students with disabilities and forced schools to provide these children with free education (All Star Staff, 2018). After reauthorizing, the EHA was eventually named the Individuals with Disabilities Education Act (IDEA) and still ensures

that children with disabilities have access to a free and appropriate public education in the least restrictive environment (U.S. Department of Education [USDOE], 2022).

The first part of IDEA is to provide students with disabilities the right to a free and appropriate education. In 2018 – 2019, public schools provided special education and related services to more than 7.5 million children with disabilities, accounting for about 14% of all public school students (USDOE, 2022). This astonishing number of students have a brighter future because of their opportunity to engage in education. The second part of IDEA guarantees students with disabilities the right to an education in the least restrictive environment. In 2018-2019, more than 64% of children with disabilities were in general education classrooms for 80% or more of their school day (USDOE, 2022). This inclusion setting into the general education curriculum keeps the expectations for students with disabilities at an equivalent to their non-disabled peers. It also gives students with disabilities the opportunities to engage with the traditional student, equipping them with social and behavioral experience.

Even though IDEA has provided students with disabilities the right to access a free and appropriate education in the least restrictive environment, students with disabilities are still falling behind their non-disabled peers in academic achievement. One component of IDEA includes nonacademic settings, such as extracurricular activities, where the appropriate services must be provided to students with disabilities to support them in the extracurricular setting (U.S. Department of Education [USDOE], 2017). Since prior research indicates that participation in extracurricular activities promotes academic achievement (Broh, 2002; Eccles et al., 2003; Freeman, 2017; Froehlich, 2020) and federal law ensures that students with disabilities receive services in the nonacademic environment, more research must focus on the relationship between extracurricular activities and students with disabilities.

Benefits of Extracurricular Activity Participation

One heavily researched area involving extracurricular activities is the effect participation has on academic achievement. Gender, race, socioeconomic status, and types of extracurricular activities, such as structured versus non-structured and school-based versus community-based programs, are recurrently examined factors. Broh (2002) conducted a quantitative ordinary least squares regression analysis on whether participation in interscholastic sports affects students' grades and test scores between the 10th and 12th grades. This study provided statistical evidence suggesting that participation positively correlates with students' math and English grades, even when controlling for background characteristics. It was also noted that participation in interscholastic sports leads to significantly higher math test scores but not significantly higher reading test scores.

Frøehlich (2020) also looked into participation in interscholastic athletics but narrowed his focus to students on free and reduced lunch. The quantitative portion of this study examined the relationship between participation in interscholastic athletics and the effect on students in poverty's GPA and ACT scores. Those who participated in athletics had a statistically significantly higher weighted and non-weighted GPA than non-participants. There was no statistically significant difference in mean ACT scores for students in poverty who participated in athletics versus those who did not participate. In the qualitative portion of this study, five successful student-athletes receiving free or reduced lunch were selected for a follow-up interview. Phenomenological data analysis techniques showed that a recurrent theme mentioned by the five students was that participation in sports helped them focus on academics.

In a different study, Freeman (2017) broadened the category of interscholastic sports to school-sponsored extracurricular activities grouped into athletics, fine arts, and clubs. This study

focused on the relationship between participation in these types of extracurricular activities and students' GPA and performance on the ACT. A slight positive relationship was discovered between participation in extracurricular activities and GPA and a strong positive relationship between participation in activities and ACT scores. When students were involved in more than five activities, GPA and ACT scores increased dramatically.

Eccles et al. (2003) broadened the scope of participation in extracurricular activities to include both school-sponsored and community-based programs. The longitudinal study divided extracurricular activities into five subcategories: prosocial activities, such as church and volunteer-based groups, team sports, performing arts, academic clubs, and school involvement activities, such as student government, pep club, or cheerleading. Research showed that students involved in prosocial activities, team sports, and academic clubs were more likely to have a higher GPA than students who did not participate. In general, extracurricular activities served as a promotive factor in academic performance and better outcomes for GPA.

Another study that explored both in-school and out-of-school activities was one by Cassaday (2000). This study focused solely on special education students and the effects extracurricular activities had on academic achievement. Cassaday's (2000) study had a relatively small sample size of about 40 students. Although the results of this study were not statistically significant, it is noted that students with disabilities who participated in school-related sports had higher grade averages than students who did not participate in school-related sports. Also, the mean grade for students who participated in out-of-school sports was higher for those who did not participate in extracurricular activities. Last, students who participated in out-of-school clubs had higher averages than those who did not participate in out-of-school clubs.

The above research demonstrates that extracurricular activities promote positive relationships with academic achievement, but the more significant question is why this relationship exists. Current literature believes that extracurricular activities provide students with positive social capital in belonging and social networks (Agran et al., 2017; Broh, 2002; Eccles et al., 2003; Feldman & Matjasko, 2005; Froehlich, 2020; Mahoney, 2014). Additionally, participation is linked to increased attendance, fewer undesired behaviors, such as discipline referrals and engagement in risky conduct, and a decrease in secondary dropouts with an increase in postsecondary enrollment (Eccles et al., 2003; Gottfried et al., 2019; Palmer et al., 2017; Wilson, 2009).

One benefit of participating in extracurricular activities is that it provides students with a sense of belonging to the school and community. Students involved in extracurricular activities feel as if they are making meaningful contributions, which provides a greater positive connection to their environment. In the study by Eccles et al. (2003), all five subcategories of student involvement (prosocial activities, team sports, performing arts, academic clubs, and school involvement) were more likely to enjoy school than their uninvolved peers. The enjoyment of school leads to greater engagement in learning, resulting in a higher level of academic performance (Christison, 2013; Eccles et al., 2003; Wilson, 2009).

Extracurricular activities also foster a more robust support system within a student's household. Research shows that enrollment in extracurricular activities significantly increases the frequency of students eating meals with their parents. Students who participate in activities also have an increase in the frequency of parent-adolescent discussions compared to their uninvolved peers (Mahoney et al., 2006). Another study noticed the same increase in social relationships between students who participated in extracurricular activities and their parents

(Broh, 2002). In addition, there was a statistically significant increase in social connections between participating students and their school, as well as a significant increase in social connections between parents of participating students and the school. There was also a statistical increase in parent-to-parent communication among those students who participated in extracurricular activities. This increase in parental communication can boost academic achievement by creating a positive association for students within the community and school environment.

Another speculation as to why extracurricular activities promote academic achievement is the access it provides students to positive peer groups. Students who participate in extracurricular activities positively associate with more academically oriented friends (Blomfield & Barber, 2010; Broh, 2002; Eccles et al., 2003) and have more friends encouraging them to do their best in school (Blomfield & Barber, 2010). This affiliation with more academically inclined peers motivates lower-achieving students to work harder. The lower-achieving student can also receive tutoring and encouragement from their peers. It has also been shown that student-athletes involved in individual sports, such as swimming, associate with fewer peers who skip school (Blomfield & Barber, 2010). This peer affiliation emphasizes the value of school and encourages the athlete to see the importance of education.

Along with access to positive peer groups, extracurricular activities allow students to connect with new friends over shared interests. Social networking is essential for students, especially those with disabilities, who often feel socially isolated (Cassaday, 2000). Students with disabilities involved in extracurricular activities have statistically significantly more active friendships than those who do not participate (Wagner et al., 2003). Agran et al. (2017) surveyed special education teachers across five states regarding their opinions on extracurricular activities.

Unfortunately, 62% of special education teachers reported that students with disabilities rarely participate in school-based activities, and 52% rarely participate in community or social-based activities. These students with disabilities are missing opportunities to practice social communication skills, and over 86% of their teachers thought this skill was the most critical IEP goal to address. In fact, 56% of the special education teachers in this study say the most important benefit of extracurricular participation is practicing social communication. Frequent time spent participating in extracurricular activities significantly predicts greater social competence (Brooks et al., 2015). The social communication aspect of extracurricular activities encourages adolescents to develop positive peer relations, teamwork cooperation, appropriate social conduct, and the self-determination and self-advocacy skills needed for academic achievement.

Another supposition to why extracurricular activities promote academic achievement is the access it gains students to positive adult relationships (Broh, 2002; Eccles et al., 2002; Mahoney, 2014). Extracurricular activities allow students to connect with caring, nonparental mentors, to which the student might not have had access otherwise. Adult sponsors can serve as guides and role models to students, and these mentors are likely to positively affect the students' development (Eccles et al., 2002). Students involved in extracurricular activities can build positive relationships with coaches and advisors who promote engagement with the school. Students are likely to work harder and perform better when attached to teachers, which correlates to positive academic achievement (Broh, 2002). Supportive adults also provide advice and equip students with goal setting and problem-solving skills, improving student success.

Being involved in extracurricular activities also helps students gain access to and build community relationships (Christison, 2013). Activities such as Scouts, 4H clubs, church groups,

and other community-based organizations provide opportunities for youth to network with peers and adults outside of their school environment. Volunteer-based groups help students feel like valued community members, and participating in athletics provides a positive public perception. For students with disabilities, gaining acceptance into the community and feeling a sense of belonging is extremely important. In a study by Agran et al. (2017), 40.5% of teachers said the most significant benefit of students with disabilities participating in extracurricular activities was facilitating acceptance into the community. This community acknowledgment helps students set long-term goals and contributes to academic success.

Another benefit seen in students who participate in extracurricular activities is the increase in school attendance rates compared to students who do not participate (Froelich, 2020; Morrissey & Werner-Wilson, 2005; Wilson, 2009). Increased attendance may be the case for several reasons. First, many schools' athletic teams have attendance requirements, where students need to be present for the school day to partake in the competition that evening. Attendance policies encourage athletes to attend school, so they do not disappoint their coaches and team members. Also, since students who participate in extracurricular activities are less likely to associate with friends who skip school, they are more likely to attend classes. Finally, participating students' improved sense of belonging and connection with peers and teachers motivates consistent attendance.

National data collected in 2013 – 2014 from the U.S. Department of Education's Civil Rights Data Collection indicated that students with disabilities were 1.5 times more likely to be chronically absent, missing at least 10% of instructional days in a school year, compared to students without disabilities (National Center for Educational Outcomes [NCED], 2018). Many factors could contribute to these excessive absences among students with disabilities, including

health conditions, trauma, and anxiety (Anderson, 2020; NCED, 2018). A study by Gottfried (2019) investigated chronic absenteeism between students with and without disabilities. This study revealed that chronic absenteeism is 11% higher for students with disabilities compared to traditional students. When examining chronic absenteeism by disability type, estimates showed that students with emotional disturbances and learning disabilities are 19.0% and 8.1%, respectively, more likely to be absent than students without disabilities. According to NCED (2018), high school chronic absenteeism is a better indicator of school dropout than test scores, and those who are chronically absent are seven times more likely to drop out. There is limited research on the effects extracurricular activities have on attendance rates of students with disabilities, and this study hopes to address this gap.

When examining existing research, another benefit of participating in extracurricular activities is that involved students receive disciplinary consequences at a much lower rate than their uninvolved peers (Feldman, 2005; Freeman, 2017). One speculation as to why involved students receive fewer discipline referrals and suspensions is the exposure to non-deviant peers (Mahoney et al., 2005). These favorable peer relationships can foster positive norms and help guide students to behave more desirably. Students involved in extracurricular activities also have access to adult leaders and mentors (Mahoney et al., 2005). Teachers and nonparental adults could encourage behavior that conforms to school conduct, reducing discipline referrals (Broh, 2002).

Another conjecture as to why students involved in extracurricular activities are disciplined at a lower rate is the reduction in risky behaviors (Eccles et al., 2003; Mahoney et al., 2006; Morrissey & Werner-Wilson, 2005; Wilson, 2009). The previously mentioned Eccles et al. (2003) study divided extracurricular activities into five subcategories. Prosocial activities and

performing arts had a much lower rate of students engaging in risky behaviors such as drinking, using drugs, and skipping classes. These activities had a more protective association when compared to sports teams, which predicted greater involvement in risky behaviors. In a literature review by Morrissey & Werner-Wilson (2005), religious activities had the most significant impact on youth development, decreasing participation in risky behavior and fewer associations with risk-taking peers. A separate study by Wilson (2009) also supports the notion that students involved in extracurricular activities have a reduction in problem behaviors. In addition, the Mahoney et al. (2006) study provides evidence that alcohol use declines for students who participate in organized activities compared to those who did not participate.

Students with disabilities account for a disproportionate abundance of discipline referrals compared to their non-disabled peers. According to Losen & Gillespie (2012), students with disabilities are suspended twice as often as non-disabled peers. A study conducted by Miller & Meyers (2015) looked into discipline practices for students with disabilities, particularly students categorized as emotionally disturbed (ED), learning disabled (LD), and autistic. Miller and Meyers (2015) noticed that the rate of students with disabilities receiving one or more ISS was twice as large compared to students without disabilities. They also noted that the rate at which students with disabilities were likely to receive more than one OSS was 31.6%, compared to 0.7% of students without disabilities. This alarming OSS rate leads to missed instructional time, putting students with disabilities' academic success even further behind.

A study by Anderson (2020) examined the relationship between disciplinary outcomes for students with disabilities, particularly those labeled as ED, other health impairments (OHI), and LD. In this study, ED students are at a greater risk for referrals, at 11%, compared to their LD peers, and students with OHI are 3.5% more likely to be referred than their LD peers. ED

students and those with OHI are also at a higher risk for suspension, both OSS and ISS, compared to their LD peers. This higher discipline rate for ED and OHI students may be due to their inability to regulate their own behavior. Students may seem impulsive or non-compliant, putting them at higher risk for disciplinary referrals.

Extracurricular activities can help students with disabilities acquire appropriate value systems about rules and conduct across different contexts. Research shows that the highest category of disciplinary referrals of students with disabilities occurred in the insubordination category, which typically relies on social context and appropriate behaviors (Bergh & Cowell, 2013). Since some students with disabilities' social skills could be an aspect of their discipline (Bergh & Cowell, 2013; Mahoney et al., 2005), students must practice their communication skills. In fact, in the study conducted by Agran et al. (2017), 56.3% of special education teachers say the most important benefit associated with extracurricular activity participation is practicing social communication and functional skills. Participation in extracurricular activities could serve as an essential tool for students with disabilities to improve their locus of control and produce school engagement, resulting in fewer disciplinary infractions (Broh, 2002). There has been limited research on the effect extracurricular activities have on the discipline of students with disabilities, and this current study hopes to investigate this relationship further.

Along with reducing risky behavior and disciplinary referrals, another protective factor of extracurricular activities is the reduction of school dropouts (Berkley, 2021; Cassaday, 2000; Mahoney, 2014; Mahoney et al., 2005; Massoni, 2011; Miller & Meyers, 2015; Palmer, 2017; Wilson, 2009). Since school dropouts are more inclined to have lower wages, rely on government systems, and engage in criminal activity (Mahoney, 2014), school systems must equip at-risk youth with opportunities to engage in and graduate from high school. A study of

youth with multi-risk profiles showed that students involved in extracurricular activities experienced lower rates of early school dropout and criminal arrests (Mahoney, 2014). When examining aggressive youth, there was an 85% dropout rate when neither the aggressive student nor their social network participated in extracurricular activities. When the aggressive student and their social network participated in extracurricular activities, the dropout percentage decreased to 19% (Mahoney, 2014). Overall, research indicates that extracurricular activities serve as an essential preventive measure for early school dropouts.

As stated previously, students with disabilities receive disproportionate suspensions associated with adverse academic outcomes. This higher discipline rate can lead to expulsion and an increase in dropping out of school. According to the National Center for Educational Statistics (2020), students with disabilities graduate at 68.2% compared to the national graduation rate of 85.5%. The Miller & Meyer (2015) study noticed that students with disabilities have a statistically higher dropout rate than students without disabilities and twice the expulsion rate compared to those without disabilities. The highest dropout rate among the three categories investigated was the ED students (21.7%), followed by the LD students (11.5%), and then students with autism (2.8%). Perhaps, extracurricular activities could provide these ED and LD students access to stable adult mentors and increase their likelihood of remaining and graduating from high school.

Many literature reviews indicate that extracurricular activities increase the attainment of postsecondary degrees (Cassaday, 2000; Christison, 2013; Dymond et al., 2020; Palmer et al., 2017; Wilson, 2009). Students in all of the five types of extracurricular activities of Eccles's (2003) longitudinal study showed a greater likelihood of attending college. In addition, students participating in team sports, performing arts, and prosocial activities had a greater college

graduation rate. Research by Palmer et al. (2017) focused on postsecondary completion for students with disabilities. This study indicated a statistically significant association between postsecondary degree completion for students with disabilities and extracurricular activity participation. Students with disabilities who participated in at least one activity were three times more likely to complete a postsecondary degree. Students with disabilities who participated in five or more activities were over five times more likely to complete a postsecondary degree than those students with disabilities who did not participate. With more jobs requiring degrees, it is essential that students with disabilities are encouraged to participate in extracurricular activities to increase the likelihood of college completion.

Summary

The literature in this chapter provided a brief history of special education and examined the benefits of participation in extracurricular activities. Better academic performance, improved social connections, and increased postsecondary rates are all positive associations of participation in extracurricular activities. Participation also reduces disciplinary and risky behaviors, chronic absences, and school dropouts. Although there is overwhelming support that extracurricular activities provide significant benefits, students with disabilities participate in extracurricular activities at a significantly lower rate than students without disabilities (Agran et al., 2017). Extracurricular activities often build character and give students the perseverance and skills needed to overcome obstacles for academic achievement (Broh, 2002). This study intends to examine the relationship between extracurricular activity participation and the number of discipline referrals, attendance rates, and academic achievement of students with disabilities. The next chapter will discuss the research design methodology, and Chapter Four will publish

the study's data analysis results. Chapter Five will summarize the study's results, conclusions, and recommendations for future research.

CHAPTER III: METHODOLOGY

Introduction

This quantitative research aims to determine whether participation in types of extracurricular activities (community-based, school-based, both, or none), the total amount of discipline referrals, and the number of absences are statistically significant predictors of academic achievement for students with disabilities. This study also examines the relationship between participation in types of extracurricular activities and attendance. Additionally, the researcher assesses the relationship between participation in types of extracurricular activities and discipline referrals for students with disabilities. Finally, there is a comparison of academic achievement for students with disabilities involved in school-based extracurricular activities versus community-based ones.

Chapter Three discusses the study's methodology. Included in this discussion are the study's participants and setting. Next, the researcher reviews the assessment that determines student academic achievement, the dependent variable of the primary research question. The study's procedures are discussed, followed by data processing methods implemented in Chapter Four.

Settings and Participants

This research will occur at Thomas Dale High School, a public suburban high school in Chester, Virginia. Thomas Dale has approximately 2534 students and is the largest of eleven high schools in Chesterfield County. This high school consists of two buildings, the Main Campus and the West Campus, located a quarter of a mile across the street. The Main Campus primarily contains students in grades 10-12 and houses the students in the Specialty Center for the Arts, grades 9 – 12. The West Campus is comprised solely of ninth graders.

Thomas Dale has a diverse population with a total minority enrollment of around 62% consisting of black (34.5%), Hispanic (19.9%), Asian (2.4%), Pacific Islander (0.4%), American Indian or Alaska Native (0.2%), and students of two or more races (4.7%). 52.1% of the school's population is female, and roughly 34% of the students are on free or reduced lunch. 13.5% of Thomas Dale's students are English Learners, and 5.3% of students are on a 504 plan. Thomas Dale High School has 338 students with Individualized Education Programs (IEPs), accounting for around 13.3% of the school's population.

In 2019, Thomas Dale High School had an on-time graduation rate of 94.44%, compared to the county average of 90.71% and the state average of 91.53%. In the same year, students with disabilities who attended Thomas Dale had an average on-time graduation rate of 90.14% compared to the county average of 83.13% and a state average of 88.62% (Virginia Department of Education [VDOE], April 2022). In addition, during the 2018 – 2019 school year, Thomas Dale High School had an 87% pass rate for the Virginia Standards of Learning (SOL) for reading compared to a 78% state average. Only 45% of students with disabilities at Thomas Dale High School passed the English Reading SOL compared to the state average of 47%. Thomas Dale High School students had an 82% pass rate on the mathematics SOL in the 2018 – 2019 school year, while students with disabilities passed the mathematics SOL at 67%. In comparison, the Virginia state mathematics SOL passing rates are 82% and 55% for students with disabilities (Virginia Department of Education School Quality Profiles, 2022).

Because of the vast difference in average pass rates of SOL scores for disabled students, the population of this study will focus solely on students with disabilities at Thomas Dale High School. For this investigation, students with disabilities are those with IEPs whose disability falls into one of the thirteen categories identified by the IDEA. In addition, these learners under

focus are those integrated into the general education classrooms and pursuing a standard, non-modified diploma. This study intends to use as many of these students with disabilities as possible. There are four main research questions this study will attempt to answer:

- Question 1:** Is participation in types of extracurricular activities (school-based, community-based, both, none), disability type, number of discipline referrals, and attendance statistically significant predictors of academic achievement for students with disabilities?
- Question 2:** Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of missed school days among students with disabilities?
- Question 3:** Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of discipline referrals among students with disabilities?
- Question 4:** Is there a statistically significant relationship in academic achievement between students with disabilities involved in school-based extracurricular activities versus their peers involved in community-based extracurricular activities?

This study's research questions will use various statistical techniques, multiple linear regression, ANOVA, and correlation techniques. This research can be generalized to Virginia schools with similar demographics and population sizes.

Before data analysis, the researcher conducted a priori power analysis for each research question using G*Power. The G*Power analysis for the first research question of the study indicated a required sample size of 92 to achieve a power of .80 with an alpha level set at 0.05 and a moderate population effect size. This estimate came from an F-Test multiple regression model with five test predictors: the total number of discipline referrals, number of absences, and types of extracurricular activities.

This study's second and third research questions investigate the relationship between the types of extracurricular activities and the number of missed school days, and the relationship between the types of extracurricular activities and the total number of discipline referrals. Both of these research questions require similar statistical measures. Running a priori power F-test analysis for ANOVA, the desired sample size for this research question is 180 participants. An alpha level of 0.05, a moderate population effect size, a power of .80, and four groups estimated this sample size.

The final research question of this study requires correlation techniques to compare the means of academic achievement between students with disabilities involved in school-based extracurricular activities versus their peers involved in community-based extracurricular activities. A priori power two-tailed T-test with an alpha level of 0.05 and a moderate population effect size indicates a necessary sample size of 128 to attain a power of .80.

Instrumentation:

In this study, the scores attained on the Virginia Reading and Mathematics SOL measure academic achievement. The scores on the SOL range from 0 to 600. A score of 0-399 fails to meet the standards, 400-499 is passing with acceptable proficiency, and 500-600 is passing with advanced proficiency. In Virginia, students must pass five high school SOLs (reading, writing,

math, history, and science) to meet graduation requirements. For federal accountability, students who pass the Algebra I or Geometry SOL in middle school must take one math SOL in grades 9-12.

The Virginia Department of Education (VDOE) established the SOLs to communicate high levels of achievement for public school students and provide the assurance of quality public education. The VDOE worked with educators and its testing contractor to create a series of tests to measure academic achievement. Blueprints, review committees, and field testing guided the development of the SOL. The first test administration of Virginia SOLs took place in the spring of 1998 (Virginia Department of Education [VDOE], March 2022).

Since its debut in 1998, the SOL tests have evolved. All new SOL test items must go through several review rounds with the testing contractor and Virginia educators. This review process helps to test the validity of the SOL. Also, the VDOE provides curriculum frameworks and SOL testing blueprints that lend support to the content validity of these rigorous assessments. In addition, the Virginia SOLs undergo reliability checks. The most recent report available via the Virginia Department of Education website shows that the reliability estimates on the 2014-2015 Reading and Mathematics SOL across gender and race are above the desired lower limit of 0.80 (VDOE, March 2022).

Procedure

After IRB approval was received, the data collection process could begin. Testing the primary hypothesis in this study required data collection from the principal, the special education department, and the mathematics department chair at Thomas Dale High School. Once the principal and special education department compiled their information, they directed it to the math department chair, who merged all the information into a single Excel file. The math

department chair then added students' math and reading SOL test scores to the Excel file. In order to keep the confidentiality of the students involved in this study, the math department chair removed students' names and identification numbers before releasing the data for analysis. The risks of participating in this study are no more than daily life experiences.

The first source of data came from the building principal. This report consisted of the entire student body. It included the following demographics for each student: gender, grade level, age, primary ethnicity, English Language status, IEP status, 504 status, attendance (out of 100 school days), number of absences, the total amount of discipline referrals, number of in-school detentions, and amount of suspensions. The principal compiled this report using Schoolzilla, a software that enables county and school leaders to track progress on various items, such as chronic absences, grades, and college readiness.

The second portion of data gathered came from the Thomas Dale High School special education department. This report consisted of only students with disabilities integrated into the general education classrooms. The special education department included each student's type of disability and their involvement in school-based or community-based extracurricular activities. A student's IEP guided the documentation of the type of disability, classified by one or more of the thirteen categories identified by IDEA. School sports and club rosters, IEP notes and goals, and a case manager's knowledge of the students they work with regularly determined a student's involvement in extracurricular activities.

The Thomas Dale High School mathematics department chair collected the final portion of the data. First, the department chair integrated the reports gathered from the building principal and special education department. The department chair was able to filter the principal's report by IEP status and then, using student names and identification numbers, add

the student's type of disability and extracurricular activity participation. Once both data sets were integrated, the department chair was ready to add students' reading and math SOL scores. Thomas Dale High School administered the 2021 – 2022 English Reading SOL at the end of March 2022 and the mathematics SOL at the beginning of May 2022. The math department chair accessed students' SOL scores from Pearson Access Next, the VDOE's program used to create, deliver, score, report, and analyze the SOLs. After acquiring the SOL scores, the department chair included them in the Excel spreadsheet with the combined data collected from the building principal and special education department. The math department chair cleansed the data of any student names and identification numbers before releasing it for analysis.

Data Processing and Analysis

After receiving the cleansed data from the Thomas Dale mathematics department chair, the researcher will comb through the Excel document and remove any rows with missing information from the following categories: participation in types of extracurricular activities, absences, discipline referrals, or disability type. Afterward, the data will be saved as a .csv file, uploaded, and analyzed using the Statistical Package, R.

The independent variables of this study are both quantitative and categorical. The quantitative independent variables include the number of discipline referrals and the number of missed school days out of 100. The categorical independent variables are types of extracurricular activity participation and a student's type of disability. Types of extracurricular activities include school-based, community-based, both types of participation, or no participation. School-based participation could include athletic or club membership, and community-based participation could include membership in an organized athletic team, church youth group, scouting troop, or other structured clubs. A student's type of disability is one of the

thirteen categories determined by IDEA. The dependent variables are students' quantitative scores on the end-of-course reading and mathematics SOL tests.

The primary question of this study asks if participation in types of extracurricular activities (school-based, community-based, both, or none), amount of discipline referrals, and the number of days absent are statistically significant predictors of academic achievement for students with disabilities. Linear multiple regression techniques will test this hypothesis. The independent variables include types of extracurricular activities, number of discipline referrals, and attendance. Since the type of extracurricular activities is a categorical variable with multiple levels, dummy variables are required to analyze the data appropriately. The dependent variables in the hypothesis are the quantitative math and reading SOL scores.

Studies similar to this present investigation have used regression techniques to analyze data. Broh (2002) used ordinary least squares regression as the statistical technique to determine if playing high school interscholastic sports benefits students' academic achievement. Broh's study measured academic achievement by students' math and English grades along with students' math and English test scores. Palmer et al. (2017) used multiple regression techniques to predict the completion of a postsecondary degree for students with disabilities using school size, school type, ethnicity, gender, parent's highest level of education, family income, and student's GPA. Palmer et al. (2017) also used logistic regression techniques to examine the extracurricular activity involvement of students with disabilities and completion of a postsecondary degree.

The second and third research questions of this study are similar in structure. The second question investigates if a statistically significant relationship exists between types of extracurricular activity participation (school-based, community-based, both, or none) and the

number of missed school days among students with disabilities. The third question investigates if a statistically significant relationship exists between types of extracurricular activity participation (school-based, community-based, both, or none) and the number of discipline referrals among students with disabilities. Since both questions involve four categorical types of extracurricular activity participation and one quantitative dependent variable, the number of absences or discipline referrals, ANOVA techniques are the most appropriate.

Bakoban & Aljarallah (2015) used ANOVA techniques to test one of their research questions. The independent variables in their study included a student's major, participation or not in extracurricular activities, and the student's number of semesters at the University. The dependent variables were the students' GPA, number of hours spent studying, amount of time spent in extracurricular activities per month, and how many times students participated in extracurricular activities per semester. To investigate if a statistically significant relationship existed between extracurricular activity participation and a student's major on their GPA, Bakoban & Aljarallah (2015) applied two-way ANOVA techniques. Mahoney (2014) also used ANOVA techniques when determining the statistical significance of the intraclass correlation between participation in typical middle school extracurricular activities and social network membership for girls and boys. Brooks et al. (2015) also used ANOVA techniques when investigating the relationship between yearly income and social skill development of students with learning disabilities, intellectual disabilities, and typically developing students.

The final research question of this study explores if there is a statistically significant relationship in academic achievement between students with disabilities involved in school-based extracurricular activities versus their peers involved in community-based extracurricular

activities. This question uses correlation techniques, specifically a two-tailed T-test, to compare the mean of both groups.

Freeman (2017) was one of many who used correlation techniques to analyze data. Freeman (2017) examined the relationship between student grade point average and involvement in extracurricular activities. Freeman (2017) also studied the relationship between student ACT scores and involvement in extracurricular activities. Froehlich (2020) also used correlation techniques and ran multiple independent T-tests to compare the students in poverty who participated in interscholastic athletics versus those who did not participate. Froehlich (2020) ran the T-test analysis over seven data points – weighted GPA, unweighted GPA, ACT scores, number of excused absences, number of unexcused absences, amount of office discipline referrals, and attendance rate.

Analyzing data using ANOVA and correlation techniques requires the assumptions of independence, normality, and equal variances. Conducting regression analyses requires the above assumptions as well as linearity. A Shapiro-Wilks test determines normality for ANOVA, and examining a model plot evaluates normality for regression techniques. Levene's test assesses equal variance for analyses using ANOVA and independent T-test. A plot of the model will be able to check for linearity in the multiple regression analysis.

Summary

This chapter reviewed the methodology of the study's research. Its contents included the type of participants involved and the data collection setting. Chapter Three also included the procedures and data processing methods to be implemented in the next chapter. Chapter Four reports the results of the data analysis, and Chapter Five will provide a summary and discussion.

CHAPTER IV: RESULTS

Introduction

This chapter presents the results of the data analysis for this quantitative study. This research aimed to analyze the effects of participation in extracurricular activities on students with disabilities. In particular, this study asked:

- 1) Is participation in types of extracurricular activities (school-based, community-based, both, none), disability type, number of discipline referrals, and number of absences statistically significant predictors of academic achievement for students with disabilities?
- 2) Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of missed school days among students with disabilities?
- 3) Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of discipline referrals among students with disabilities?
- 4) Is there a statistically significant relationship in academic achievement between students with disabilities involved in school-based extracurricular activities versus their peers involved in community-based extracurricular activities?

Materials and Methods

After receiving the data set, the data was reviewed and cleansed for any missing and incomplete information. Four entries were excluded from the data set due to missing documented extracurricular activities (n=1), disability type (n=2), or the number of absences (n=1). The original race-ethnicity variable consisted of six categories: Asian, Black, Hispanic,

Pacific Islander, Two or More Races, and White. Similar to Palmer et al. (2017), the researcher re-coded ethnicity into four categories: White, Black, Hispanic, and Other. The original disability variable consisted of Autism, Emotional Disability, Intellectual Disability, Other Health Impairment, Specific Learning Disability, Speech-Language Impairment, Traumatic Brain Injury, Visual Impairment, and combinations of those mentioned above. A student with one or more disabilities listed was categorized according to their primary disability (n=63); for instance, a student whose disability was listed as Autism and Other Health Impairment was categorized as Autism.

The remaining data set included 216 subjects, 73 females (33.8%) and 143 males (66.2%). Of the female participants, 31 (14.4%) were of white ethnicity, 24 (11.1%) were black, 11 (5.1%) were Hispanic, and seven (3.2%) were of other races. Of the 31 white female participants, one (0.5%) student's primary disability was Autism, one (0.5%) student's primary disability was ED, 16 (7.4%) students' primary disabilities were Other Health Impairments, and 11 (5.1%) students' primary disabilities were SLD, one (0.5%) student's primary disability was TBI, and one (0.5%) student's primary disability was VI. The breakdown for the remaining three ethnicities are found in Table 1. Of the male participants, 66 (30.6%) were of white ethnicity, 50 (23.1%) were black, 22 (10.2%) were Hispanic, and five (2.3%) were of different nationalities. Of the 66 white male participants, 22 (10.2%) student's primary disability was Autism, 32 (14.8%) students' primary disabilities were Other Health Impairments, 11 (5.1%) students' primary disabilities were SLD, and one (0.5%) student's primary disability was SLI. The breakdown for the remaining three ethnicities are found in Table 1.

Table 1

Primary Disability Breakdown by Ethnicity for Females and Males

Female	(n=73)	33.8%	Male	(n=143)	66.2%
White	(n=31)	14.4%	White	(n=66)	30.6%
AUT	(n=1)	0.5%	AUT	(n=22)	10.2%
ED	(n=1)	0.5%	ED	(n=0)	0.0%
ID	(n=0)	0.0%	ID	(n=0)	0.0%
OHI	(n=16)	7.4%	OHI	(n=32)	14.8%
SLD	(n=11)	5.1%	SLD	(n=11)	5.1%
SLI	(n=0)	0.0%	SLI	(n=1)	0.5%
TBI	(n=1)	0.5%	TBI	(n=0)	0.0%
VI	(n=1)	0.5%	VI	(n=0)	0.0%
Black	(n=24)	11.1%	Black	(n=50)	23.1%
AUT	(n=3)	1.4%	AUT	(n=8)	3.7%
ED	(n=0)	0.0%	ED	(n=1)	0.5%
ID	(n=0)	0.0%	ID	(n=1)	0.5%
OHI	(n=12)	5.6%	OHI	(n=22)	10.2%
SLD	(n=7)	3.2%	SLD	(n=17)	7.9%
SLI	(n=2)	0.9%	SLI	(n=1)	0.5%
TBI	(n=0)	0.0%	TBI	(n=0)	0.0%
VI	(n=0)	0.0%	VI	(n=0)	0.0%
Hispanic	(n=11)	5.1%	Hispanic	(n=22)	10.2%
AUT	(n=2)	0.9%	AUT	(n=3)	1.4%
ED	(n=0)	0.0%	ED	(n=0)	0.0%
ID	(n=0)	0.0%	ID	(n=0)	0.0%
OHI	(n=2)	0.9%	OHI	(n=7)	3.2%
SLD	(n=7)	3.2%	SLD	(n=11)	5.1%
SLI	(n=0)	0.0%	SLI	(n=0)	0.0%
TBI	(n=0)	0.0%	TBI	(n=1)	0.5%
VI	(n=0)	0.0%	VI	(n=0)	0.0%
Other	(n=7)	3.2%	Other	(n=5)	2.3%
AUT	(n=0)	0.0%	AUT	(n=1)	0.5%
ED	(n=0)	0.0%	ED	(n=0)	0.0%
ID	(n=0)	0.0%	ID	(n=1)	0.5%
OHI	(n=3)	1.4%	OHI	(n=2)	0.9%
SLD	(n=4)	1.9%	SLD	(n=1)	0.5%
SLI	(n=0)	0.0%	SLI	(n=0)	0.0%
TBI	(n=0)	0.0%	TBI	(n=0)	0.0%
VI	(n=0)	0.0%	VI	(n=0)	0.0%

The study's average number of student absences was 5.69, with a standard deviation of 6.14 and a range of 0 to 40. Females' mean number of absences (5.81) was slightly larger than males (5.64), and students involved in no extracurricular activities had the highest average of missed school days, 6.70, compared to other types of extracurricular activity participation. Students of other ethnicities had the highest mean number of absences (9.42) across ethnicities, and students whose primary disability was categorized as TBI had the highest mean number of absences across disability types (9.00). Table 2 presents the means and standard deviations for the number of absences by gender, extracurricular activity type, ethnicity, and disability type.

Table 2

Descriptive information on the number of absences by Gender, ECA Type, Ethnicity, and Disability Type

Group (n=216)				Mean (SD)
Gender				
Male	(n=143)	66.2%		5.64 (6.11)
Female	(n=73)	33.8%		5.81 (6.23)
Type of ECA				
School	(n=56)	25.9%		4.84 (4.29)
Community	(n=15)	6.9%		3.33 (4.61)
Both	(n=16)	7.4%		2.81 (2.29)
None	(n=129)	59.7%		6.70 (7.03)
Ethnicity				
White	(n=97)	44.9%		5.34 (6.38)
Black	(n=74)	34.3%		5.23 (4.62)
Hispanic	(n=33)	15.3%		6.42 (6.61)
Other	(n=12)	5.6%		9.42 (9.67)
Disability				
AUT	(n=40)	18.5%		3.13 (4.27)
ED	(n=2)	0.9%		5.00 (1.41)
ID	(n=2)	0.9%		8.50 (2.12)
OHI	(n=96)	44.4%		6.83 (6.86)
SLD	(n=69)	31.9%		5.42 (5.81)
SLI	(n=4)	1.9%		6.50 (6.35)
TBI	(n=2)	0.9%		9.00 (7.07)
VI	(n=1)	0.5%		4.00 (N/A)

Out of 216 students in the study, 173 (80.1%) students had no discipline referrals, while 43 (19.9%) had one or more. The range of discipline referrals was from 0 to 8. The average number of referrals written was 0.41, with a standard deviation of 1.07. Females' mean number of referrals (0.44) was slightly larger than males (0.40), and students involved in no extracurricular activities had the highest average of referrals, 0.47, compared to other types of extracurricular activity participation. Students of other ethnicities had the highest mean number of referrals (0.67) across ethnicities, and students whose primary disability was categorized as OHI had the highest mean number of referrals across disability types (0.64). Table 3 presents the means and standard deviations for the number of referrals by gender, extracurricular activity type, ethnicity, and disability type.

Table 3
Descriptive information of the number of referrals by Gender, ECA Type, Ethnicity, and Disability Type

Group (n=216)			Mean (SD)
Gender			
Male	(n=143)	66.2%	0.40 (0.96)
Female	(n=73)	33.8%	0.44 (1.28)
Type of ECA			
School	(n=56)	25.9%	0.45 (0.87)
Community	(n=15)	6.9%	0.20 (0.56)
Both	(n=16)	7.4%	0.06 (0.25)
None	(n=129)	59.7%	0.47 (1.24)
Ethnicity			
White	(n=97)	44.9%	0.35 (1.00)
Black	(n=74)	34.3%	0.47 (1.18)
Hispanic	(n=33)	15.3%	0.36 (0.78)
Other	(n=12)	5.6%	0.67 (1.61)
Disability			
AUT	(n=40)	18.5%	0.05 (0.22)
ED	(n=2)	0.9%	0.50 (0.71)
ID	(n=2)	0.9%	0.00 (0.00)
OHI	(n=96)	44.4%	0.64 (1.42)
SLD	(n=69)	31.9%	0.35 (0.80)
SLI	(n=4)	1.9%	0.25 (0.50)
TBI	(n=2)	0.9%	0.00 (0.00)
VI	(n=1)	0.5%	0.00 (N/A)

Data Analysis

In order to analyze the research questions, Multiple Regression techniques, Analysis of Variance (ANOVA) techniques, and an independent t-test were used. The following section presents the results for each research question.

Hypothesis 1:

Hypothesis 1 stated: Participation in types of extracurricular activities (school-based, community-based, both, or none), type of disability, number of discipline referrals, and number of absences are statistically significant predictors of academic achievement for students with disabilities. Specifically, students involved in extracurricular activities, with fewer discipline referrals and absences, are academically more successful. The researcher implemented two multiple regression analyses to examine the academic success of students who took the Reading SOL and those who took the Mathematics SOL.

After initial cleansing, the data set included eight disability types AUT, ED, ID, OHI, SLD, SLI, TBI, and VI. In 2015, Brooks et al. studied only students with Learning Disabilities and moderate Intellectual Disabilities, while Miller & Meyers (2015) examined students with Learning Disabilities, Emotional Disturbances, and Autism. Comparable to these aforementioned studies, a student's disability type was reduced to contain three disability types, those students with Autism, Other Health Impairments, or Specific Learning Disabilities. Students whose primary disabilities consisted of VI (n=1), TBI (n=2), ED (n=2), SLI (n=4), and ID (n=2) were eliminated from the data set.

The remaining data set included 205 subjects, 68 females (33.2%) and 137 males (66.8%). Of the female participants, 28 (13.7%) were of white ethnicity, 22 (10.7%) were black, 11 (5.4%) were Hispanic, and seven (3.4%) were of other races. The breakdown for all four

female ethnicities are found in Table 4. Of the male participants, 65 (47.4%) were of white ethnicity, 47 (34.3%) were black, 21 (15.3%) were Hispanic, and four (2.9%) were of different nationalities. The breakdown for all four male ethnicities are found in Table 4.

Table 4
Primary Disability Breakdown by Ethnicity for Females and Males

Female	(n=68)	33.2%	Male	(n=137)	66.8%
White	(n=28)	13.7%	White	(n=65)	31.7%
AUT	(n=1)	0.5%	AUT	(n=22)	10.7%
OHI	(n=16)	7.8%	OHI	(n=32)	15.6%
SLD	(n=11)	5.4%	SLD	(n=11)	5.4%
Black	(n=22)	10.7%	Black	(n=27)	13.2%
AUT	(n=3)	1.5%	AUT	(n=8)	3.9%
OHI	(n=12)	5.9%	OHI	(n=22)	10.7%
SLD	(n=7)	3.4%	SLD	(n=17)	8.3%
Hispanic	(n=11)	5.4%	Hispanic	(n=21)	10.2%
AUT	(n=2)	1.0%	AUT	(n=3)	1.5%
OHI	(n=2)	1.0%	OHI	(n=7)	3.4%
SLD	(n=7)	3.4%	SLD	(n=11)	5.4%
Other	(n=7)	3.4%	Other	(n=4)	2.0%
AUT	(n=0)	0.0%	AUT	(n=1)	0.5%
OHI	(n=3)	1.5%	OHI	(n=2)	1.0%
SLD	(n=4)	2.0%	SLD	(n=1)	0.5%

The study's average number of student absences was 5.63, with a standard deviation of 6.21 and a range of 0 to 40. Females' mean number of absences (5.71) was slightly larger than males (5.60), and students involved in no extracurricular activities had the highest average of missed school days, 9.64, compared to other extracurricular activity participation. Students of other ethnicities had the highest mean number of absences (9.64) across ethnicities, and students whose primary disability was categorized as OHI had the highest mean number of absences

across disability types (6.83). Table 5 presents the means and standard deviations for the number of absences by gender, extracurricular activity type, ethnicity, and disability type.

Table 5

Descriptive information of the number of absences by Gender, ECA Type, Ethnicity, and Disability Type

Group (n=205)			Mean (SD)
Gender			
Male	(n=137)	66.8%	5.60 (6.17)
Female	(n=68)	33.2%	5.71 (6.35)
Type of ECA			
School	(n=54)	26.3%	4.89 (4.31)
Community	(n=15)	7.3%	3.33 (4.61)
Both	(n=16)	7.8%	2.81 (2.29)
None	(n=120)	58.5%	6.63 (7.19)
Ethnicity			
White	(n=93)	45.4%	5.38 (6.51)
Black	(n=69)	33.7%	5.09 (4.54)
Hispanic	(n=32)	15.6%	6.19 (6.57)
Other	(n=11)	5.4%	9.64 (10.11)
Disability			
AUT	(n=40)	19.5%	3.13 (4.27)
OHI	(n=96)	46.8%	6.83 (6.86)
SLD	(n=60)	29.3%	5.42 (5.81)

Out of the remaining 205 students, 164 (80.0%) students had no discipline referrals, while 41 (20.0%) had one or more. The range of discipline referrals was from 0 to 8. The average number of referrals written was 0.42, with a standard deviation of 1.10. Females' mean number of referrals (0.47) was slightly larger than males (0.40), and students involved in no extracurricular activities had the highest average of referrals, 0.49, compared to other extracurricular activity participation. Students of other ethnicity had the highest mean number of referrals (0.73) across ethnicities, and students whose primary disability was categorized as OHI had the highest mean number of referrals across disability types (0.64). Table 6 presents the

means and standard deviations for the number of referrals by gender, extracurricular activity type, ethnicity, and disability type.

Table 6
Descriptive information of the number of referrals by Gender, ECA Type, Ethnicity, and Disability Type

Group (n=205)			Mean (SD)
Gender			
Male	(n=137)	66.8%	0.40 (0.97)
Female	(n=68)	33.2%	0.47 (1.32)
Type of ECA			
School	(n=54)	26.3%	0.44 (0.88)
Community	(n=15)	7.3%	0.20 (0.56)
Both	(n=16)	7.8%	0.06 (0.25)
None	(n=120)	58.5%	0.49 (1.28)
Ethnicity			
White	(n=93)	45.4%	0.37 (1.02)
Black	(n=69)	33.7%	0.48 (1.22)
Hispanic	(n=32)	15.6%	0.38 (0.79)
Other	(n=11)	5.4%	0.73 (1.68)
Disability			
AUT	(n=40)	19.5%	0.05 (0.22)
OHI	(n=96)	46.8%	0.64 (1.42)
SLD	(n=60)	29.3%	0.35 (0.80)

Forty-eight students with disability types AUT, OHI, and SLD (23.4%) took the reading SOL. The mean reading score was 407.90, with a standard deviation of 53.26 and a range of 280 to 503. Females had a higher mean Reading SOL score (415.44) than males (403.37). Students involved in both school-based and community-based extracurricular activities had the highest average, 444.86, compared to other extracurricular activity participation. White students had the highest mean Reading SOL score across ethnicities (421.82), and students whose primary disability was categorized as OHI had the highest mean Reading SOL score across disability

types (413.48). Table 7 presents the means and standard deviations for those who took the reading SOL by gender, extracurricular activity type, ethnicity, and disability type.

Table 7

Descriptive information of Gender, ECA Type, Ethnicity, and Disability Type of students who took Reading SOL

Group (n=48)			Mean (SD)
Gender			
Male	(n=30)	62.5%	403.37 (53.20)
Female	(n=18)	37.5%	415.44 (54.02)
ECA Type			
School	(n=14)	29.2%	391.21 (55.60)
Community	(n=3)	6.3%	425.67 (57.71)
Both	(n=7)	14.6%	444.86 (34.08)
None	(n=24)	50.0%	404.63 (53.10)
Ethnicity			
White	(n=22)	45.8%	421.82 (56.35)
Black	(n=17)	35.4%	392.29 (49.15)
Hispanic	(n=7)	14.6%	414.14 (40.42)
Other	(n=2)	4.2%	365.50 (77.08)
Disability Type			
AUT	(n=9)	18.8%	405.78 (64.00)
OHI	(n=25)	52.1%	413.48 (57.62)
SLD	(n=14)	29.2%	399.29 (38.24)

Since the sample size for those participating in community extracurricular activities was extremely low, n=3, the researcher modified the research question to: Is participation in extracurricular activities (yes/no), type of disability (AUT, OHI, or SLD), number of discipline referrals, and attendance statistically significant predictors of academic achievement for students with disabilities. Collapsing the involvement categories from school-based, community-based, both, or none to strictly participation or no participation allowed for a more meaningful analysis. The mean and standard deviation for students with disabilities involved in extracurricular

activities (n=24, 50.0%) were 411.17 and 54.36. The mean and standard deviation for those not involved in extracurricular activities (n=24, 50.0%) were 404.63 and 53.10.

Before conducting a multiple regression analysis, four assumptions needed verification. A Durbin-Watson test examined the first assumption of independence $DW = 1.467, p < .05$. The test showed statistical significance, which indicates there may be a violation of the assumption of independence. A Shapiro-Wilks Normality test verified the normality $W = 0.968, p = .218$. A QQ plot and a boxplot of the residuals are shown below in Charts 1 and 2:

Chart #1: QQ Plot of Residuals

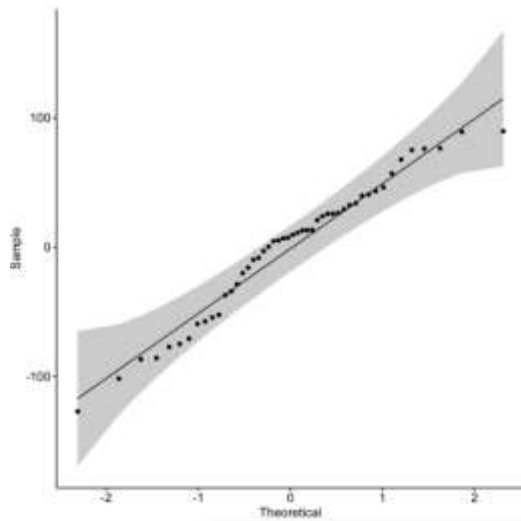
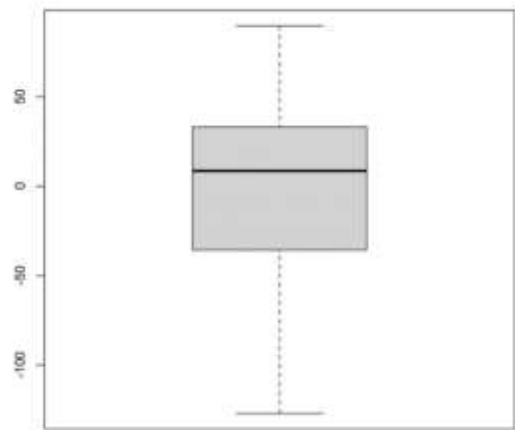


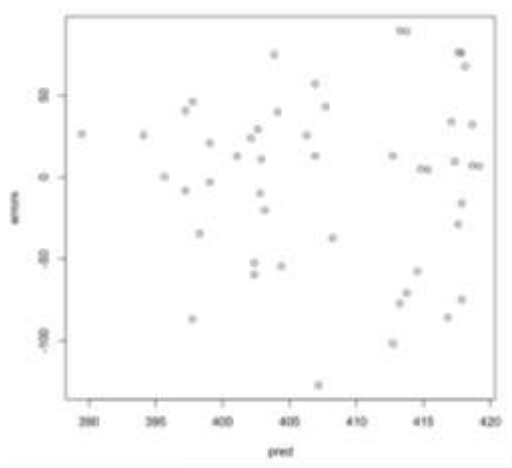
Chart #2: Box Plot of Standard Residuals



Examining a scatter plot of the residuals confirmed the third assumption of equal variance.

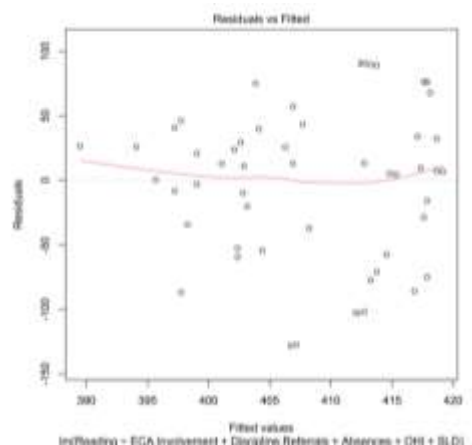
There appears to be a mostly random pattern, which is shown in Chart 3.

Chart #3: Scatter Plot of Residuals



The fourth assumption of linearity was checked by examining a plot of the residuals versus the fitted values (Chart 4). A nearly horizontal line appears, indicating the assumption of linearity was met. Running a Variance Inflation Factor (VIF) analysis indicated that multicollinearity was not an issue, as all values were less than 3.

Chart #4: Residuals versus fitted values



Multiple regression analysis determined that the model is not statistically significant $F(5, 42) = 0.205$, $p = .959$. The adjusted r^2 determined -9.2% of the variance in Reading Scores is explained by regression on participation in extracurricular activities, the number of

discipline referrals and absences, and type of disability. When controlling for the number of discipline referrals, absences, and disability types of OHI and SLD, students involved in extracurricular activities predicted Reading scores increased by 4.10. When controlling for extracurricular activity involvement, the number of absences, and disability types of OHI and SLD, students who receive more discipline referrals predicted Reading Score decreases by 9.31. When controlling for extracurricular activity involvement, the number of discipline referrals and absences, and the disability type of SLD, students whose disability is OHI predicted Reading scores increased by 9.65. When controlling for extracurricular activity involvement, the number of discipline referrals and absences, and the disability type of OHI, students whose disability is SLD predicted Reading scores decreased by 5.84. The coefficients of the predicted model, residuals, p-values, and 95% confidence intervals are listed in Table 8.

Table 8

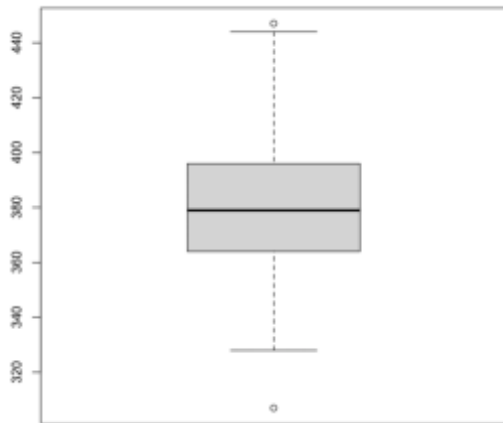
Estimates, Standard Errors, t-values, p-values, and 95% confidence intervals for the model: Reading SOL Scores predicted by ECA Involvement, Discipline Referrals, Absences, OHI, & SLD

	Estimate	Standard Error	t-value	P-value	95% confidence interval
Intercept	402.804	21.594	18.653	$p < .001$	(359.226, 446.383)
Involvement in ECA	4.102	16.424	0.250	$p = .804$	(-29.044, 37.247)
Number of Discipline Referrals	-9.308	17.177	-0.542	$p = .591$	(-43.972, 25.356)
Number of Absences	0.2606	2.558	0.102	$p = .919$	(-4.902, 5.423)
Disability type of OHI*	9.648	23.031	0.419	$p = .677$	(-36.830, 56.127)
Disability type of SLD*	-5.840	24.401	-0.239	$p = .812$	(-55.084, 43.404)

**Compared to reference group of Autism*

Forty-seven students with disabilities of AUT, OHI, and SLD (22.9%) took the mathematics SOL. The mean math score was 381.77, with a standard deviation of 28.16, and a range of 307 to 447. A box plot, Chart 5, of the math SOL scores indicates two outliers, one at 307 and one at 447.

Chart #5: Boxplot of math SOL scores



Females had a higher mean Math SOL score (383.14) than males (381.18). Students involved in only school-based extracurricular activities had the highest average, 388.60, compared to other extracurricular activity participation. Hispanic students had the highest mean Math SOL score across ethnicities (390.80), and students whose primary disability was categorized as OHI had the highest mean Math SOL score across disability types (382.66). Table 9 presents the means and standard deviations for those who took the math SOL by gender, extracurricular activity type, ethnicity, and disability type.

Table 9

Descriptive information of Gender, ECA Type, Ethnicity, and Disability Type of students who took the Mathematics SOL

Group				Mean (SD)
Gender				
Male	(n=33)	70.2%		381.18 (29.46)
Female	(n=14)	29.8%		383.14 (25.83)
ECA Type				
School	(n=15)	31.9%		388.60 (27.95)
Community	(n=4)	8.5%		373.50 (23.95)
Both	(n=3)	6.4%		372.33 (3.06)
None	(n=25)	53.2%		380.12 (30.61)
Ethnicity				
White	(n=20)	42.6		382.45 (26.91)
Black	(n=15)	31.9%		375.07 (30.07)
Hispanic	(n=10)	21.3%		390.80 (24.74)
Other	(n=2)	4.3%		380.00 (55.15)
Disability Type				
AUT	(n=8)	17.0%		378.13 (33.12)
OHI	(n=16)	34.0%		382.63 (27.41)
SLD	(n=23)	28.9%		382.44 (28.12)

Again, since the sample size for those participating in community extracurricular activities was extremely low $n=4$, the researcher modified the research question to: Is participation in extracurricular activities (yes/no), type of disability (AUT, OHI, or SLD), number of discipline referrals, and attendance statistically significant predictors of academic achievement for students with disabilities. Collapsing the involvement categories from school-based, community-based, both, or none to strictly participation or no participation allowed for a more meaningful analysis. The mean and standard deviation for students with disabilities involved in extracurricular activities ($n=22$) was 383.63 and 25.67. The mean and standard deviation for those not involved in extracurricular activities ($n=25$) was 380.12 and 30.61.

Before conducting a multiple regression analysis, four assumptions needed verification. A Durbin-Watson test examined the first assumption of independence. The test showed a non-

statistically significant Durbin-Watson value, $DW = 1.745, p = .176$, indicating independence can be assumed. A Shapiro-Wilks Normality test verified the normality assumption $W = 0.973 p = .353$. A QQ plot and a boxplot of the residuals are shown below in Chart 6 and 7. The QQ Plot shows some deviation from the line, and the boxplot shows a few outliers.

Chart #6: QQ Plot of Residuals

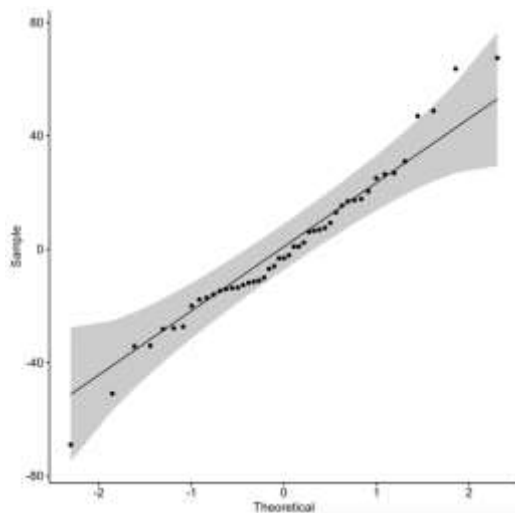
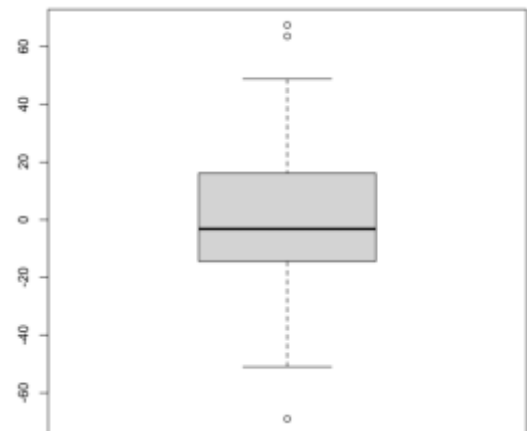
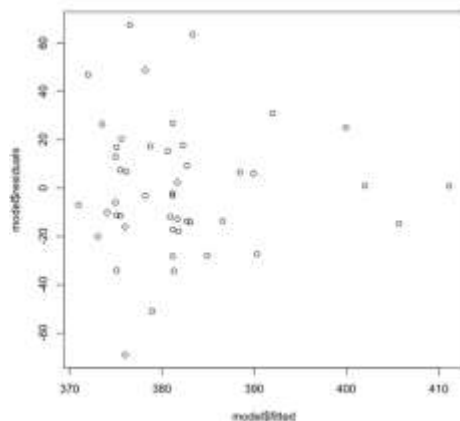


Chart #7: Box Plot of Residuals



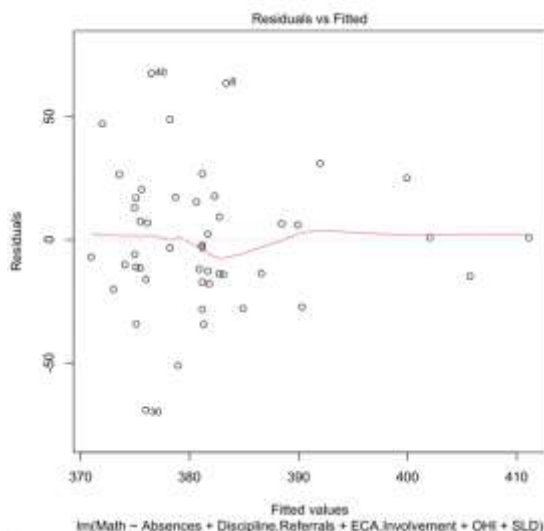
A scatterplot of the residuals versus the fitted values examined the third assumption of equal variance. The values are skewed to the left and show some fanning which is shown in Chart 8.

Chart #8: Scatter Plot of Residuals



The fourth assumption of linearity was checked by examining a plot of the residuals versus the fitted values (Chart 9). There is a dip in the horizontal line.

Chart #9: Residuals versus fitted values



Multiple regression analysis determined that the model is not statistically significant $F(5, 41) = 0.853, p = .521$. The adjusted r^2 determined -1.6% of the variance in Math Scores is explained by regression on participation in extracurricular activities, the number of discipline referrals and absences, and type of disability. When controlling for the number of discipline referrals, absences, and disability types of OHI and SLD, students involved in extracurricular activities predicted Math scores increase by 6.72. When controlling for extracurricular activity involvement, the number of absences, disability types of OHI and SLD, students who receive more discipline referrals predicted Math Score increased by 4.38. When controlling for extracurricular activity involvement, the number of discipline referrals, absences, and disability type of SLD, students whose disability is OHI predicted Math scores decreased by 4.64. When controlling for extracurricular activity involvement, the number of discipline referrals, absences, and disability type of OHI, students whose disability is SLD predicted Math scores increased by

0.39. The coefficients of the predicted model, residuals, p-values, and 95% confidence intervals are listed in Table 10.

Table 10

Estimates, Standard Errors, t-values, p-values, and 95% confidence intervals for the model: Math SOL Scores predicted by ECA Involvement, Discipline Referrals, Absences, OHI, & SLD

	Estimate	Standard Error	t-value	P-value	95% confidence interval
Intercept	374.059	10.970	34.100	$p < .001$	(351.906,396.212)
Involvement in ECA	6.721	8.539	0.787	$p = .436$	(-10.523,23.966)
Number of Discipline Referrals	4.376	2.829	1.547	$p = .130$	(-1.336,10.089)
Number of Absences	0.515	0.912	0.565	$p = .575$	(-1.327,2.358)
Disability type of OHI*	-4.642	13.139	-0.353	$p = .726$	(-31.176,21.893)
Disability type of SLD*	0.391	11.845	0.033	$p = .974$	(-23.531,24.313)

**Compared to reference group of Autism*

Because the sample size for academic success using Reading SOL scores was relatively low ($n=48$) for the number of predictors ($n=5$), the researcher decided to analyze the data without types of disabilities, changing the question to: Are the number of absences, discipline referrals, and extracurricular activity involvement significant predictors of academic success. Before conducting a multiple regression analysis, four assumptions needed verification. A Durbin-Watson test examined the first assumption of independence $DW = 1.458, p = .052$. The test did not show statistical significance, indicating there was no violation of the assumption of independence. A Shapiro-Wilks Normality test verified the normality $W = 0.974, p = .358$. A QQ plot and a boxplot of the residuals are shown below in Charts 10 and 11:

Chart #10: QQ Plot of Residuals

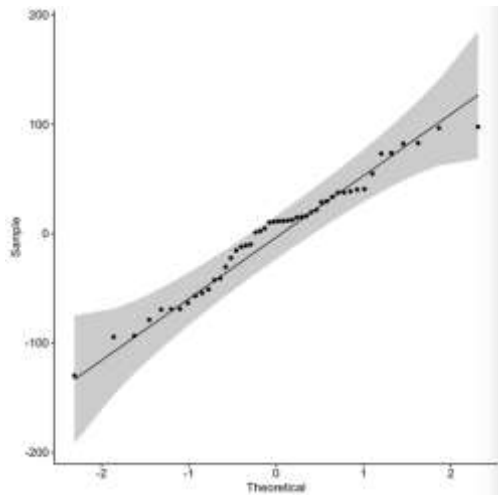
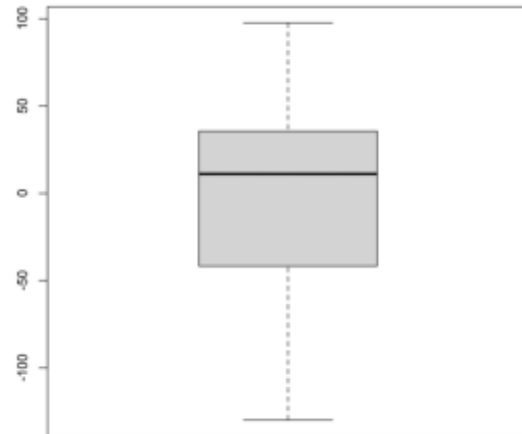
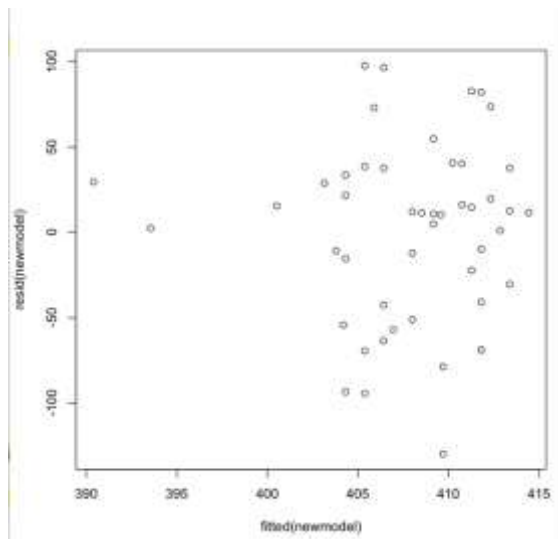


Chart #11: Box Plot of Standard Residuals



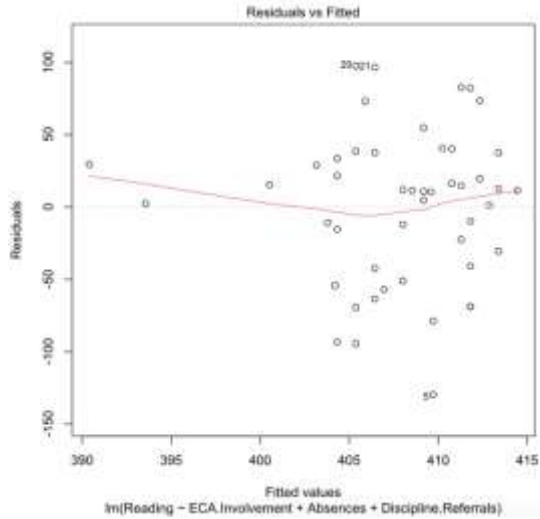
Examining a scatter plot of the fitted values versus the residuals confirmed the third assumption of equal variance. There appears to be some fanning, which is shown in Chart 12.

Chart #12: Scatter Plot of Residuals



The fourth assumption of linearity was checked by examining a plot of the residuals versus the fitted values (Chart 13). A nearly horizontal line appears, indicating the assumption of linearity was met. Running a Variance Inflation Factor (VIF) analysis indicated that multicollinearity was not an issue, as all values were less than 3.

Chart #13: Residuals versus fitted values



Multiple regression analysis determined that the model is not statistically significant $F(3, 44) = 0.205$, $p = .950$. The adjusted r^2 determined -6.0% of the variance in Reading Scores is explained by regression on participation in extracurricular activities, and the number of discipline referrals and absences. The coefficients of the predicted model, residuals, p-values, and 95% confidence intervals are listed in Table 11.

Table 11

Estimates, Standard Errors, t-values, p-values, and 95% confidence intervals for the model: Reading SOL Scores predicted by ECA Involvement, Discipline Referrals, Absences.

	Estimate	Standard Error	t-value	P-value	95% confidence interval
Intercept	403.789	15.714	25.697	$p < .001$	(372.130, 435.467)
Involvement in ECA	5.381	16.070	0.335	$p = .739$	(-27.006, 37.768)
Number of Discipline Referrals	-6.964	16.683	-0.417	$p = .678$	(-40.586, 26.659)
Number of Absences	0.527	2.418	0.218	$p = .829$	(-4.346, 5.399)

Because the sample size for academic success using Math SOL scores was relatively low ($n=47$) for the number of predictors ($n=5$), the researcher decided to analyze the data without types of disabilities, in other words: Are the number of absences, discipline referrals, and extracurricular activity involvement significant predictors of academic success.

Before conducting a multiple regression analysis, four assumptions needed verification. A Durbin-Watson test examined the first assumption of independence $DW = 1.703, p = .252$. The test did not show statistical significance, indicating there is no violation of the assumption of independence. A Shapiro-Wilks Normality test verified the normality $W = 0.977, p = .474$. A QQ plot and a boxplot of the residuals show some outliers, which are shown below in Charts 14 and 15:

Chart #14: QQ Plot of Residuals

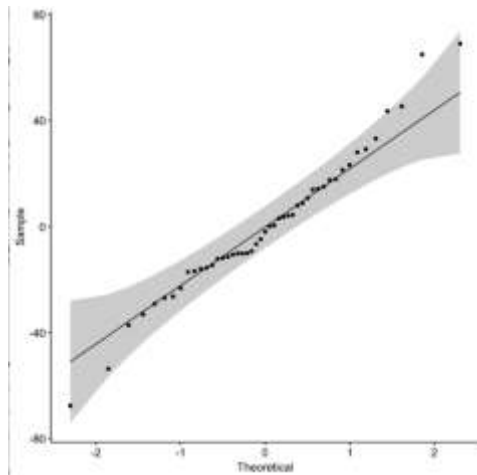
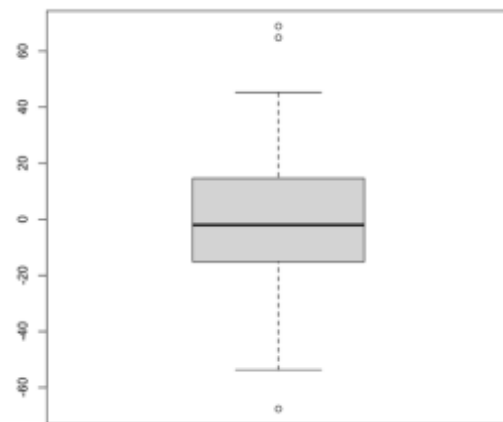
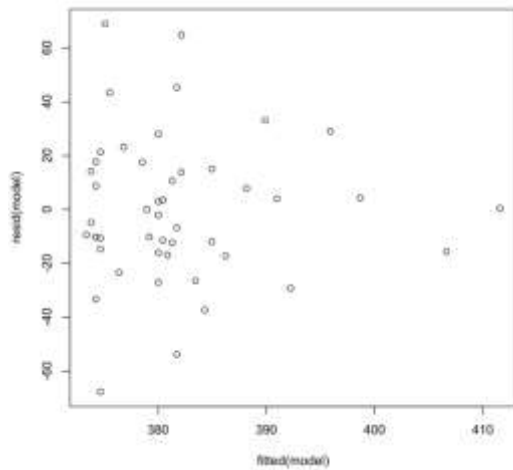


Chart #15: Box Plot of Standard Residuals



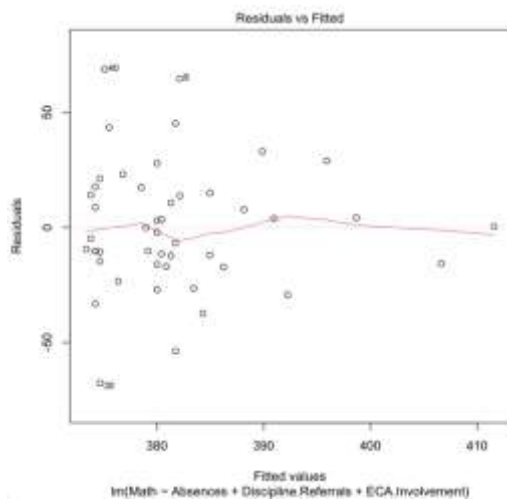
Examining a scatter plot of the fitted values versus the residuals confirmed the third assumption of equal variance. There appears to be some fanning, which is shown in Chart 16.

Chart #16: Scatter Plot of Residuals



The fourth assumption of linearity was checked by examining a plot of the residuals versus the fitted values (Chart 17). A nearly horizontal line appears, indicating the assumption of linearity was met. Running a Variance Inflation Factor (VIF) analysis indicated that multicollinearity was not an issue, as all values were less than 3.

Chart #17: Residuals versus fitted values



Multiple regression analysis determined that the model is not statistically significant $F(3, 43) = 1.383, p = .261$. The adjusted r^2 determined 2.4% of the variance in Math Scores

is explained by regression on participation in extracurricular activities, and the number of discipline referrals and absences. The coefficients of the predicted model, residuals, p-values, and 95% confidence intervals are listed in Table 12.

Table 12

Estimates, Standard Errors, t-values, p-values, and 95% confidence intervals for the model: Math SOL Scores predicted by ECA Involvement, Discipline Referrals, Absences.

	Estimate	Standard Error	t-value	P-value	95% confidence interval
Intercept	373.373	7.232	51.629	$p < .001$	(358.788, 387.957)
Involvement in ECA	6.635	8.291	0.800	$p = .428$	(-10.085, 23.355)
Number of Discipline Referrals	4.077	2.698	1.511	$p = .138$	(-1.363, 9.518)
Number of Absences	0.429	0.877	0.489	$p = .627$	(-1.340, 2.199)

Hypothesis 2:

Hypothesis 2 stated: There is a significant relationship between students with disabilities and the type of extracurricular activity participation (school-based, community-based, both, none) and the number of missed school days. Specifically, students with disabilities involved in extracurricular activities will have better attendance rates than students with disabilities who are not involved in extracurricular activities. Using all 216 students in this study, the researcher used Analysis of Variance (ANOVA) statistical methods to test this hypothesis.

A Shapiro-Wilk Normality showed that the overall population is not normally distributed ($W = 0.784$, $p < .001$). The breakdown for each extracurricular activity type is located in Table 13.

Table 13
Shapiro-Wilk Normality W-value and p-value

ECA Type		
School	$W = 0.880$	$p < .001$
Community	$W = 0.695$	$p < .001$
Both	$W = 0.937$	$p = .319$
None	$W = 0.798$	$p < .001$

Levene's Test for Homogeneity of Variance indicated a violation of the assumption of equal variance $F(3,212) = 4.964$, $p < .01$. Because one-way ANOVA can tolerate violations to the assumptions of normality and homogeneity of variances assumption rather well, (Sawyer, 2009) the researcher continued the statistical method of a one-way ANOVA. A one-way ANOVA model showed a statistically significant difference in the number of absences across extracurricular activity types ($F(3,212) = 3.551$, $p < .05$, $w = .185$). A post hoc power analysis using G*Power indicated a power of 78.9%. A Tukey post hoc test revealed non-significant differences in the number of absences between each comparison. Table 14 provides the p-values and confidence intervals for each group.

Table 14
Tukey Post-HOC p-values and confidence intervals

Post HOC Comparisons	p-value	Confidence intervals
Community vs Both	$p = .995$	$(-5.091, 6.133)$
Community vs None	$p = .175$	$(-0.895, 7.624)$
Community vs School	$p = .826$	$(-3.033, 6.046)$
None vs Both	$p = .074$	$(-0.254, 8.024)$
None vs School	$p = .220$	$(-4.357, 0.640)$
School vs Both	$p = .637$	$(-2.400, 6.453)$

Hypothesis 3:

Hypothesis 3 stated: There is a significant relationship between students with disabilities and the type of extracurricular activity participation (school-based, community-based, both, none) and their overall behavior. Specifically, students with disabilities who are involved in extracurricular activities will have fewer written referrals than students with disabilities who are not involved in extracurricular activities. Using all 216 students in this study, the researcher used Analysis of Variance (ANOVA) statistical methods to test this hypothesis.

A Shapiro-Wilk Normality showed that the overall population is not normally distributed ($W = 0.442$, $p < .001$). The breakdown for each extracurricular activity type is located in Table 15.

Table 15
Shapiro-Wilk Normality W-value and p-value

ECA Type		
School	$W = 0.571$	$p < .001$
Community	$W = 0.421$	$p < .001$
Both	$W = 0.273$	$p < .001$
None	$W = 0.434$	$p < .001$

Levene's Test for Homogeneity of Variance indicated a violation of the assumption of equal variance ($F(3,212) = 3.392, p < .05$). Even though the assumptions of normality and equal variance were violated, the researcher continued with running an ANOVA model. (Sawyer (2009)). An ANOVA model did not show a statistically significant difference in the number of referrals across extracurricular activity types ($F(3,212) = .881, p = .452, w^2 = -.002$). A post hoc power analysis using G*Power indicated a power of 24.5%.

Hypothesis 4:

Hypothesis 4 stated: There is a significant relationship in academic achievement between students with disabilities involved in school-based extracurricular activities versus their peers involved in community-based extracurricular activities. Specifically, students with disabilities involved in school-based extracurricular activities will have better academic success than students with disabilities who are involved in community-based extracurricular activities. Two independent sample T-Tests were conducted to test this hypothesis, one to examine the relationship between participation on Reading SOL scores and the second to examine the relationship between participation on Mathematics SOL scores.

The data set containing 216 students was cleansed to include only those students who were involved in either school-based or community-based extracurricular activities, resulting in 17 students out of 52 Reading SOL test takers (32.7%). The mean Reading SOL score for those involved in either a school-based or community-based extracurricular activity was 397.29, with a standard deviation of 55.78. Table 16 includes the descriptive statistics for those students who took the reading SOL who were involved in either a school-based extracurricular activity or community-based extracurricular activity.

Table 16

Descriptive information of students involved in either school-based or community-based activities who took the Reading SOL

Group (n=17)			Mean (SD)
Gender			
Male	(n=11)	64.7%	388.55 (58.6)
Female	(n=6)	35.3%	413.33 (51.012)
ECA Type			
School	(n=14)	82.4%	391.21 (55.60)
Community	(n=3)	17.6%	425.67 (57.71)
Ethnicity			
White	(n=9)	52.9%	402.00 (67.76)
Black	(n=8)	47.1%	392.00 (42.46)
Disability Type			
AUT	(n=3)	17.6%	357.00 (71.04)
ED	(n=0)	0.0%	N/A (N/A)
ID	(n=0)	0.0%	N/A (N/A)
OHI	(n=9)	52.9%	409.44 (59.19)
SLD	(n=5)	29.4%	399.60 (36.86)
SLI	(n=0)	0.0%	N/A (N/A)
TBI	(n=0)	0.0%	N/A (N/A)
VI	(n=0)	0.0%	N/A (N/A)

Since the sample size for those participating in community extracurricular activities was extremely low, n=3, the researcher modified the research question to: Is there a statistically significant relationship in academic achievement between students with disabilities involved in

extracurricular activities versus their uninvolved peers. Table 17 includes the descriptive statistics for those students (n=52) who took the reading SOL who were either involved or uninvolved in extracurricular activities.

Table 17

Descriptive information of students either involved or uninvolved in extracurricular activities who took the Reading SOL.

Group (n=52)			Mean (SD)
Gender			
Male	(n=33)	63.5%	399.36 (54.61)
Female	(n=19)	36.5%	413.42 (53.24)
ECA Involvement			
Yes	(n=24)	46.2%	411.17 (54.36)
No	(n=28)	53.8%	398.79 (54.05)
Ethnicity			
White	(n=22)	42.3%	421.82 (56.35)
Black	(n=20)	38.5%	391.15 (46.93)
Hispanic	(n=7)	13.5%	414.14 (40.42)
Other	(n=3)	5.8%	344.00 (66.01)
Disability Type			
AUT	(n=9)	17.3%	405.78 (64.00)
ED	(n=1)	1.9%	427.00 (N/A)
ID	(n=2)	3.8%	325.50 (34.65)
OHI	(n=25)	48.1%	413.48 (57.62)
SLD	(n=14)	26.9%	399.29 (38.24)
SLI	(n=1)	1.9	377.00 (N/A)
TBI	(n=0)	0.0%	N/A (N/A)
VI	(n=0)	0.0%	N/A (N/A)

Three assumptions needed verification to conduct the t-tests. The first assumption of independence was fulfilled since the independent variables are categorical (participation in community-based and school-based extracurricular activities), and the dependent variable is quantitative and continuous (scores on the Reading SOL and Mathematics SOL). A Shapiro-Wilk Normality test confirmed the second assumption of normality for the Reading SOL scores

($W = 0.973$, $p = .293$). Levene's Test for Homogeneity of Variance tested the third assumption. Reading SOL scores met the assumption of equal variance ($F(1,50) = 0.016$, $p = .900$).

A pooled t-test examined the relationship between students with disabilities involved in extracurricular activities or those uninvolved in extracurricular activities and their academic success on the Reading SOL. The difference was not statistically significant for those not involved in extracurricular activities versus those involved in extracurricular activities $t(50) = -0.821$, $p = .415$ with a 95% confidence interval of $(-42.660, 17.898)$. A small Pearson's Correlation Coefficient, $r = .115$, was calculated, and a post hoc power analysis using G*Power indicated a very low power (12.6%).

Next, to analyze the relationship between participation in extracurricular activities on Mathematics SOL scores, the data set containing 216 students was cleansed to include only those students who were involved in either school-based or community-based extracurricular activities, resulting in 19 students out of 48 Math SOL test takers (39.6%). The mean Math SOL score for those involved in either a school-based or community-based extracurricular activity was 385.42, with a standard deviation of 27.26. Table 18 includes the descriptive statistics for students who took the Math SOL and were involved in either a school-based or community-based extracurricular activity.

Table 18

Descriptive information on students involved in either school-based or community-based activities who took the Mathematics SOL.

Group (n=19)			Mean (SD)
Gender			
Male	(n=10)	52.6%	388.20 (30.92)
Female	(n=9)	47.4%	382.33 (24.00)
ECA Type			
School	(n=15)	78.9%	388.60 (27.95)
Community	(n=4)	21.1%	373.50 (23.95)
Ethnicity			
White	(n=10)	52.6%	385.30 (32.53)
Black	(n=5)	26.3%	384.60 (26.61)
Hispanic	(n=4)	21.1%	386.75 (18.36)
Disability Type			
AUT	(n=3)	15.8%	389.33 (50.06)
ED	(n=0)	0.0%	N/A (N/A)
ID	(n=0)	0.0%	N/A (N/A)
OHI	(n=6)	31.6%	380.83 (28.17)
SLD	(n=10)	52.6%	387.00 (21.60)
SLI	(n=0)	0.0%	N/A (N/A)
TBI	(n=0)	0.0%	N/A (N/A)
VI	(n=0)	0.0%	N/A (N/A)

Since the sample size for those participating in community extracurricular activities was extremely low, $n=4$, the researcher modified the research question to: Is there a statistically significant relationship in academic achievement between students with disabilities involved in extracurricular activities versus their uninvolved peers. Table 19 includes the descriptive statistics for those students ($n=48$) who took the Math SOL who were either involved or uninvolved in extracurricular activities.

Table 19

Descriptive information on students either involved or uninvolved in extracurricular activities who took the Mathematics SOL.

Group (n=48)			Mean (SD)
Gender			
Male	(n=34)	70.8%	381.26 (29.01)
Female	(n=14)	29.2%	383.14 (25.83)
ECA Involvement			
Yes	(n=22)	45.8%	380.63 (25.67)
No	(n=26)	54.2%	380.27 (30.00)
Ethnicity			
White	(n=20)	41.2	382.45 (26.91)
Black	(n=15)	31.3%	375.07 (30.07)
Hispanic	(n=11)	22.9%	390.18 (23.56)
Other	(n=2)	4.2%	380.00 (55.15)
Disability Type			
AUT	(n=8)	16.7%	378.13 (33.12)
ED	(n=0)	0.0%	N/A (N/A)
ID	(n=0)	0.0%	N/A (N/A)
OHI	(n=16)	33.3%	382.63 (27.41)
SLD	(n=23)	47.9%	382.43 (28.12)
SLI	(n=0)	0.0%	N/A (N/A)
TBI	(n=0)	0.0%	N/A (N/A)
VI	(n=1)	2.1%	384.00 (N/A)

Three assumptions needed verification to conduct the t-tests. The first assumption of independence was fulfilled since the independent variables are categorical (participation in community-based and school-based extracurricular activities), and the dependent variable is quantitative and continuous (Mathematics SOL). A Shapiro-Wilk Normality test confirmed the second assumption of normality for the mathematics SOL scores ($W = 0.980, p = .573$). Levene's Test for Homogeneity of Variance tested the third assumption. Math SOL scores met the assumption of equal variance $F(1,46) = .340, p = .563$.

A pooled t-test examined the relationship between students with disabilities who were involved in extracurricular activities or those uninvolved in extracurricular activities and their

academic success on the Mathematics SOL. The difference was not statistically significant for those not involved in extracurricular activities versus those involved in extracurricular activities $t(46) = -0.414$, $p = .681$ with a 95% confidence interval of $(-19.757, 13.023)$. A small Pearson's Correlation Coefficient, $r = .061$, was calculated, and a post hoc power analysis using G*Power indicated a very low power (6.9%).

Summary

This chapter presented the method and results of the data analysis for each research question. Hypothesis one implemented Multiple Regression Techniques, hypotheses two and three implemented ANOVA techniques, and hypothesis four implemented independent t-tests. The overall hypotheses conclude that participation in extracurricular activities does not have a statistically significant effect on students with disabilities. Due to non-statistical significance, hypotheses 1, 3, and 4 were rejected. Hypothesis 2 was not rejected, as an ANOVA analysis showed statistical significance in the type of extracurricular activity participation on the number of absences. However, a post-hoc Tukey test did not validate any statistically significant differences among variables. Chapter Five will discuss the results of these analyses.

CHAPTER V: CONCLUSION

Introduction

Chapter Five presents the summary of the study. It includes the statement of the problem and the data analysis conclusions. This chapter also provides recommendations for future research.

The study occurred at Thomas Dale High School, a large, diverse suburban school in Chester, Virginia. The subjects were students with disabilities, determined by their IEP status, included in the general education classrooms. This research studied participation in extracurricular activities and their effects on students with disabilities. A portion of the data set was obtained through Pearson Access Next, which provided measures of student success in terms of Reading and Mathematics SOL scores. Schoolzilla provided gender, race, and the number of discipline referrals and absences. The special education department at Thomas Dale High School provided each student's type of disability and types of extracurricular activity involvement. Multiple Regression Techniques, ANOVA techniques, and independent t-tests analyzed the data.

Summary

Students with disabilities often fall behind their non-disabled peers in academic success (Virginia Department of Education [VDOE], 2021). In addition, students with disabilities tend to have more discipline referrals (Anderson, 2020; Losen & Gillespie, 2012; Miller & Meyers, 2015) and an increased number of absences (Anderson, 2020; Gottfried et al., 2019; NCED, 2018). The literature review showed the positive impact extracurricular activities often have on students. Extracurricular activities promote academic achievement (Broh, 2002; Eccles et al.,

2003; Freeman, 2017; Froehlich, 2020) and students involved in extracurricular activities often have better attendance rates (Froelich, 2020; Morrissey & Werner-Wilson, 2005; Wilson, 2009). Students involved in extracurricular activities receive fewer discipline referrals (Feldman, 2005; Freeman, 2017), most likely due to access to positive peer groups and adult mentorships (Blomfield & Barber, 2010; Broh, 2002; Eccles et al., 2003).

Although researchers have extensively analyzed the impact participation in extracurricular activities has on students, there is limited research focused solely on students with disabilities. This study aimed to determine if extracurricular activities could also have a significant effect on students with disabilities. The following presents the findings for each question of the study.

1) Is participation in types of extracurricular activities (school-based, community-based, both, none), disability type, number of discipline referrals, and number of absences statistically significant predictors of academic achievement for students with disabilities?

Two multiple regression analyses were conducted, one for academic achievement measured by Reading SOL scores and another for academic achievement measured by Mathematics SOL scores. Because of low sample sizes, the question was revised to: Is participation in extracurricular activities (yes/no), disability type, the number of discipline referrals, and the number of absences statistically significant predictors of academic achievement for students with disabilities? The disability types were categorized as Autism, Other Health Impairments, and a Specific Learning Disability.

The first multiple regression model for academic achievement measured by Reading SOL scores showed that participation in extracurricular activities, disability type, the number of

discipline referrals, and the number of absences are not statistically significant predictors of academic achievement. Therefore, the null hypothesis is accepted.

The second multiple regression model for academic achievement measured by Mathematics SOL scores showed that participation in extracurricular activities, disability type, the number of discipline referrals, and the number of absences are not statistically significant predictors of academic achievement. Therefore, the null hypothesis is accepted.

Next, a situational model was conducted because of the high standard errors from the previous two multiple regression models. This situational model eliminated the type of disability, restating the research question to: Is participation in extracurricular activities (yes/no), the number of discipline referrals, and the number of absences statistically significant predictors of academic achievement for students with disabilities?

The first multiple regression analysis for the situational model for academic achievement measured by Reading SOL scores showed that participation in extracurricular activities, the number of discipline referrals, and the number of absences are not statistically significant predictors of academic achievement. Therefore, the null hypothesis is accepted.

The second multiple regression analysis for the situational model for academic achievement measured by Mathematics SOL scores showed that participation in extracurricular activities, the number of discipline referrals, and the number of absences are not statistically significant predictors of academic achievement. Therefore, the null hypothesis is accepted.

2) Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of missed school days among students with disabilities?

An Analysis of Variance (ANOVA) was conducted to determine if there was a statistically significant relationship between the types of extracurricular activities, categorized as school-based, community-based, both school and community-based, or no participation and the number of absences. A one-way ANOVA model showed a statistically significant difference in the number of absences across extracurricular activity types, rejecting the null hypothesis of an equal number of absences between groups. A post-hoc Tukey comparison did not show statistical significance between each of the comparisons.

3) Is there a statistically significant relationship between types of extracurricular activity participation (school-based, community-based, both, none) and the number of discipline referrals among students with disabilities?

An Analysis of Variance (ANOVA) was conducted to determine if there was a statistically significant relationship between the types of extracurricular activities, categorized as school-based, community-based, both school and community-based, or no participation and the number of discipline referrals. A one-way ANOVA model did not show a statistically significant difference in the number of discipline referrals across extracurricular activity types, accepting the null hypothesis that each group has about the same number of discipline referrals.

4) Is there a statistically significant relationship in academic achievement between students with disabilities involved in school-based extracurricular activities versus their peers involved in community-based extracurricular activities?

Two independent t-tests were conducted, one for academic achievement measured by Reading SOL scores and another for academic achievement measured by Mathematics SOL scores. Because of low sample sizes for community-based extracurricular activities, the question

was revised to: Is there a statistically significant relationship in academic achievement between students with disabilities involved in extracurricular activities versus their uninvolved peers?

The first independent t-test for academic achievement measured by Reading SOL scores did not show statistical significance in participation in academic achievement between students involved in extracurricular activities and their uninvolved peers. The null hypothesis was accepted, indicating no statistically significant difference in mean Reading SOL scores based on participation in extracurricular activities.

The second independent t-test for academic achievement measured by Mathematics SOL scores did not show statistical significance in participation in academic achievement between students involved in extracurricular activities and their uninvolved peers. The null hypothesis was accepted, indicating no statistically significant difference in mean Math SOL scores based on participation in extracurricular activities.

Conclusions

When comparing this study to previous ones, there are some similarities and contradictions in the results. The first variable that had both similarities and differences to previous studies was that of discipline referrals. One similarity was with the study by Anderson (2020), where students with OHI have a higher mean number of discipline referrals than other disability types. Contrary to previous studies in which students involved in extracurricular activities receive fewer discipline referrals (Feldman, 2005; Freeman, 2017), the mean number of discipline referrals for students with disabilities not involved in extracurricular activities (0.49) was almost identical to the mean number of those involved in school only extracurricular activities (0.44). In addition, hypothesis three of this study did not result in statistical difference

when examining the number of discipline referrals across types of extracurricular activity participation.

Another noted likeness was when investigating the attendance variable in comparison to the studies of Froelich (2020), Morrissey & Werner-Wilson (2005), and Wilson (2009). In hypothesis two of this current study, the one-way ANOVA model resulted in a statistically significant difference in the number of absences across extracurricular activity types, rejecting the null hypothesis of equal means across groups. Although the post-hoc Tukey comparison did not show statistical evidence for each group comparison, participation in no extracurricular activities and participation in both school-based and community-based had the greatest difference in means. Students with disabilities who are not involved in extracurricular activities had over a double average of missed school days compared to students involved in both school-based and community-based extracurricular activities.

When examining academic success, this current study had mixed results with the previous studies of Broh (2002), Eccles et al. (2003), Freeman (2017), and Froehlich (2020). These studies showed that participation in extracurricular activities promoted academic success; however, hypothesis four of this current study did not yield a statistically significant difference for participation in extracurricular activities across mean reading and math SOL scores. Although there was no statistically significant evidence, those who participated in extracurricular activities scored higher on average. Also, when examining reading scores, those who participated in extracurricular activities had a mean of 411, and those who did not participate in extracurricular activities scored a mean of 398. Virginia educators may see this mean difference as noteworthy, as a score of less than 400 is a failure to meet the state standards, and those involved in extracurricular activities, on average, had a passing score. Some conflicting results

appeared when examining extracurricular activity participation types (school-based, community-based, both, and none). Students involved in school-based extracurricular activities had the lowest mean for Reading SOL, and students involved in both school-based and community-based extracurricular activities had the lowest mean for Math SOL scores.

Recommendations

Prior research shows that extracurricular activities increase student success, improve attendance rates, and decrease discipline referrals. Although statistically significant evidence was not reached on most of the hypotheses of this study, the mean value comparisons support research that has been previously conducted. This study provides a foundation for future research, and based on the results, the following recommendations are made.

First, in order to provide more accurate results, a larger sample size should be used. Unlike most studies, the population under focus was only special education students. Since special educations make up about 15% of a school's population (National Center for Education Statistics, 2022), this dramatically decreases the subjects in the study. In addition, two of the hypotheses in this study measured academic success, further narrowing down the number of participants to those that only took the reading or math SOL. Cassaday (2000), who also studied only special education students, also ran into an issue of a limited number of participants. Inadequate sample size results in low power and, at times, loss of variables wanted for research. It is recommended that this study uses multiple schools in the same district or county to obtain a larger sample size.

A second recommendation is to investigate the number of discipline referrals across disability types and extracurricular activity participation. Similarly, investigate the number of absences across disability types and extracurricular activity participation. Both of these analyses

would dive deeper into each disability type and potentially help teachers, counselors, and administration pre-determine ways to keep at-risk students with disabilities on track with fewer absences and discipline referrals.

A final recommendation would be to break down extracurricular activity types further. Categories such as team sports, performing arts, academic clubs, prosocial activities, and school involvement activities are some examples of groups used by Broh (2002), Cassaday (2000), Eccles et al. (2003), and Freeman (2017). The breakdown of such extracurricular activities could give insight into which particular involvement makes students with disabilities more successful.

In conclusion, additional research should be conducted on the effects extracurricular activities have on students with disabilities. With the number of students with disabilities on the rise (USDOE, 2021) and students with disabilities academically falling behind their non-disabled peers (The National Center for Educational Statistics, 2020), it is imperative that a better understanding goes into what makes students with disabilities successful learners. Students with disabilities are a vulnerable population, and extracurricular activities are essential to a student's development (Freeman, 2017). Teachers, counselors, and administrators should continue to advocate for opportunities to improve students with disabilities' academic achievement.

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