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THE RELATIONSHIP BETWEEN STUDENT ENGAGEMENT AND ACT ASPIRE READING SCORES AMONG NINTH-GRADE STUDENTS IN ONE NORTHWEST ARKANSAS JUNIOR HIGH SCHOOL

By

DWIGHT VINCENT, JR.

Submitted to the Faculty of the Graduate College of
Arkansas Tech University
in partial fulfillment of the requirements
for the degree of
DOCTOR OF EDUCATION IN SCHOOL LEADERSHIP
December 2023

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DEDICATION

I would like to thank my parents, Dwight and Melissia Vincent, and my sister April Vincent, for always loving, encouraging, and supporting me. Also, I was blessed with a second set of parents. I want to thank my Uncle Fred and Aunt Marilyn for the impact that they have had on my life. I also want to thank Aunt B for being such a special auntie. Lastly, I want to dedicate this dissertation, this doctoral degree, and my career to my brother, Frank Watson. Frank passed away in November of 2022 while I was in this program. I thought about quitting, but I knew Frank would want me to finish, so I finished this program in honor of him. I have always been proud to be his little brother. I know Frank is proud of me for finishing this program. I want to say thank you to Frank for showing me, and everyone who knew him, how to live life.

ACKNOWLEDGEMENTS

I would like to thank God for bringing me to this place and this time in my life to finish this dissertation and earn a terminal degree in education. I would like to thank Dr. John Freeman for his patience, guidance, and for helping me get to the finish line. I would also like to thank Dr. Steve Bounds for serving on my committee. I would like to thank Rickey Hicks, who I met in 2014 while we were both coaching at Parkview. Rickey Hicks has proven to be a true friend, and I am thankful for the impact he has had on my personal and professional growth over the last nine years. I hope that one day, we work in the same district together again in some capacity. I would like to thank my childhood friends for their friendship and for our brotherhood. I would like to thank Dr. Jeff Flanigan for pushing me to pursue a terminal degree in the first place. I met Dr. Jeff Flanigan in the summer of 2013 when we were both coaching in the Blytheville School District. In our very first conversation, he told me to "play chess, not checkers." My first chess move was that I listened to his advice, and I've been listening to his advice ever since. Thank you for being a true friend and mentor to me as I navigate my career as an educator. I would not have earned my last three degrees, including this doctoral degree, if I had not met him. Now that I have earned this terminal degree, I can rightfully say, "checkmate."

ABSTRACT

THE RELATIONSHIP BETWEEN STUDENT ENGAGEMENT AND ACT ASPIRE READING SCORES AMONG NINTH-GRADE STUDENTS IN ONE NORTHWEST ARKANSAS JUNIOR HIGH SCHOOL

Dwight Vincent, Jr.

The purpose of this study was to examine the relationship between academic achievement and attendance. Reading proficiency is foundational to overall academic success. In this study, reading proficiency served as the operational definition for the level of student academic success. Out-of-school suspension is a disciplinary consequence as a result of student behavior and correlates to student attendance. This quantitative, correlational study examined the relationship between student engagement, as defined by student attendance and discipline, and reading proficiency, as measured by the 2021-22 ACT Aspire Reading scores for ninth-grade students in one northwest Arkansas junior high school.

Descriptive data analysis was conducted to show the demographic makeup of the school and the frequencies and means of attendance and discipline data. Raw scores for the ACT Aspire Reading Assessment were used as a measure of student academic success. Using Spearman Rho and multiple linear regression analysis, the results of this study revealed the effect of chronic absenteeism on the reading proficiency of these ninth-grade students in one Northwest Arkansas junior high school. Three regression models were formulated using student attendance, gender, and ethnicity as predictor variables, with a combined 11.6% explanation for the variance in the reading scores. While the analysis indicated that attendance, gender, and ethnicity predicted reading

scores, student discipline was removed from the regression analysis as a predictor variable.

Conclusions from the research include that out-of-school suspensions have a negative effect on reading proficiency due to their increasing student attendance. Discipline alone did not appear to affect reading proficiency and academic achievement significantly. The results support previous research in this field, indicating that students with higher attendance tend to have better reading proficiency. This research suggests that school leaders must provide alternatives to out-of-school suspensions and find solutions to negative student behavior to increase instructional time. This research contributes to the ongoing dialogue surrounding the negative academic impact of low attendance, exacerbated by out-of-school suspensions and academic achievement.

Keywords: academic achievement, attendance, chronic absenteeism, ethnicity, gender, lost instructional time, moderate absenteeism, out-of-school suspension, reading proficiency, school discipline

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CHAPTER I

INTRODUCTION

U.S. public education faces many obstacles in preparing all students to succeed academically. The recent COVID-19 epidemic exacerbated obstacles that were already existent in the schools by forcing an ill-prepared transition to online instruction. As the nation returns to some semblance of normalcy in the schools, it is predicted that the effects of the pandemic on student academic performance may be felt for years to come. The immediate effects can be seen in the 2022 National Assessment of Educational Progress (NAEP) results, which show the most significant decrease in scores nationally since the assessment began.

Contrary to post-COVID education concerns, U.S. public schools struggled before the pandemic. A litany of obstacles can be cited for poor academic performance. The pandemic made it even more challenging to deal with those obstacles. Poverty, low attendance, and discipline problems were just a few of the obstacles already contributing to low academic performance at all grade levels, nationally and in Arkansas.

Student engagement is one obstacle that profoundly impacts academic success (Varjas et al., 2009). If a student is not present and engaged during the teaching/learning process, it becomes impossible for that student to succeed. While the research literature regarding student engagement is vast and includes many variables, this study sought to view student engagement in its most elemental state: attendance and discipline.

Identifying student engagement as the number of days the student is present at school, compounded by the number of discipline referrals, provides evidence of how engaged the student is with the school and his/her teachers and is actively contributing to

their academic success. Attendance and discipline referrals often affect at-risk students to a higher degree because those students are already facing other issues unrelated to the school environment that act as obstacles to academic success (Vargas et al., 2009).

Many issues, such as illness or lack of parental supervision, impact student attendance. In truth, many legitimate issues related to attendance are outside the school's control. However, one issue that is within the school's control and may affect attendance is the school's discipline policy. If suspension or expulsion is a part of the punitive results of various violations of the school's discipline policy, then the policy contributes to the low attendance problem. In effect, disciplinary punishment such as out-of-school suspension, expulsion, and in-school suspension acts as covariates to attendance.

Disciplinary policies are developed at the district and school levels to provide rules for maintaining an orderly learning environment. Students and parents are provided access to a student policy handbook by the school administrators outlining those rules and the consequences or penalties for breaking those rules. In many cases, the disciplinary policies do not solve the underlying causes of disruptive behavior that leads to suspension or expulsion (Tyre et al., 2011).

The impact of suspension and expulsion on the student's academic success is most pronounced in lost instructional time. Since at-risk students are often more likely to engage in conduct that violates school rules, they also lose the most instructional time. For example, students struggling with tardiness and absenteeism are often given consequences such as detention, in-school suspension, or out-of-school suspension. Tardiness and absenteeism result in lost instructional time, and the consequences for

violating school rules compound the issue by adding to lost instructional time (Tyre et al., 2011).

Poverty is another obstacle to student academic success, contributing to student attendance issues (D'Agostino et al., 2018). A student who lives in a low-income environment may have more stress outside of the classroom due to home and neighborhood factors, including drug use, violence, abuse, secondhand smoke, neglect, and low academic expectations. Low-income students often have fewer academic resources at home, such as a safe and quiet place to study, reliable home internet, or food insecurity (D'Agostino et al., 2018). These factors can contribute to a student's disengagement from the learning process while at school and lead to higher rates of absenteeism and discipline referrals.

Additionally, because of food insecurity and the threat of homelessness, students missing school to work is prevalent in high-poverty areas (D'Agostino et al., 2018). The extra income a teenager can bring home reduces the financial stress on the household, and this often takes precedence over attending school. This issue is compounded in the case of the teen parent. Teen parents are most common among teenagers who come from low-income families (Shane, 1991).

Students who are teen parents often settle for entry-level income that does not require a high school diploma over staying in school to earn a diploma. Data shows that teen parents are less likely to attend and graduate from a postsecondary institution (Shane, 1991). These issues surrounding poverty put the student at risk for poor academic performance, affecting the student's attendance, discipline, and ability to succeed in school.

Background of the Problem

An at-risk student is a student who has a predisposition for poor academic performance based on any number of factors (Rieg, 2007). Some of these factors include living in a single-parent home, being a minority, having limited English language proficiency, receiving at least one academic intervention, frequent absenteeism, retention in one or more grades, severe behavior problems, low academic performance, low socioeconomic status, and drug and alcohol use (Rieg, 2007). Concerning attendance and discipline, a student who has missed 10% or more of the school year falls under chronic absenteeism (Learning, 2022). This includes excused absences, unexcused absences, and absences due to suspension.

More than 20% of students in the U.S. are chronically absent, with 10% of Arkansas students being identified as such (Learning, 2022). Northwest Arkansas's diverse student population mirrors that statewide average of 10% chronic absenteeism. Chronic absenteeism means lost instructional time, which, in turn, directly affects student academic success (Roby, 2004).

The National Assessment of Educational Progress (NAEP), or The Nation's Report Card, is a standardized test given to fourth-, eighth-, and twelfth-graders to measure their academic achievement in Reading, Math, and Science. The 2022 NAEP results show that nationally, only 29% of eighth graders read proficiently on grade level, while only 26% of Arkansas eighth graders were proficient in reading.

As a result of poor attendance and discipline, a student who does not read on grade level usually struggles with content in every other subject area. If the student is not reading on grade level, the student does not have the academic foundation to be

successful on grade level in any other subject. Mathematics primarily deals with numbers, but students must be able to read at grade level to understand instructions for mathematics assignments. Every other core subject is reading intensive, including English Language Arts, Social Studies, and Science. Reading achievement strongly correlates to overall academic success (Baysu et al., 2023).

The Arkansas Department of Education uses a formula that produces a school letter grade to determine a school's effectiveness (Learning, 2023). Formulating school letter grades is an intricate process, with 17 modules contributing to a formula determining a letter grade (Learning, 2023). The modules measure various aspects of the school, including student attendance, teacher quality, student performance on standardized tests, school safety, and student discipline, to name a few data sources (Learning, 2023).

Of the 17 school report card modules, this research study included the three indicators most closely related to student engagement. These three modules are School Quality and Student Success, School Performance, and School Environment (Learning, 2023). These three modules relate to the research on student engagement and align with the independent variables, attendance and discipline, and the dependent variable, ACT Aspire reading test scores.

From an administrative standpoint, school leaders must understand that many of our students need parental support and encouragement to perform well academically (Allensworth & Evans, 2016). An administrator must have effective interventions to improve student engagement for students who typically have disproportionately low attendance and disproportionately high discipline referrals (Montero-Sieburth & Turcatti,

2022). With that, this research attempted to show the relationship and predictability of attendance and discipline as a measure of student engagement in a Northwest Arkansas junior high school on ninth-grade ACT Aspire Reading scores.

Statement of the Problem

Student engagement reflects a student's passion or motivation to succeed academically. It is reflected in the quality of a student's relationship with family, school staff, and peers (Li & Xue, 2023; Montero-Sieburth, 2022). It can also be reflected in the student's effort to double-check school work after completion, seek tutoring, and extend learning beyond the classroom (Shin & Bolkan, 2021). It reflects the student's perception of the relevance of the curriculum and school to the student's life outside and after high school (Rose & Bowen, 2021). If student engagement is low or non-existent, it can be predicted that student academic success will suffer. Therefore, the problem addressed by this study was to determine the relationship between student engagement and academic success as measured by scores on the ninth-grade ACT Aspire Reading scores for one Northwest Arkansas junior high school.

For this study, student engagement was operationally defined by the level of attendance and disciplinary referrals by ninth-grade students in the participating junior high school and served as the independent variables. Academic success was measured by ACT Aspire Reading Assessment scores that served as the dependent variable.

Purpose Statement

This study aimed to examine the relationship between student engagement, as measured by the level of student attendance and disciplinary referrals, and the reading scores for these participating ninth-grade junior high school students. Students in

Arkansas public schools are required to take a standardized test, the ACT Aspire, which measures reading ability. Considering attendance data, discipline data, and ACT Aspire reading scores, the study aimed to show the correlation between student engagement and reading. Since reading comprehension indicates overall academic achievement (Beluce et al., 2018), if reading scores are suffering, finding solutions to the causes of those low scores is incumbent upon schools. Therefore, if high absenteeism and discipline referrals are one of the causes of low reading scores, administrators can focus on solutions to absenteeism and discipline issues.

Conceptual Framework

Student engagement is a construct that affects academic achievement (Williams et al., 2023). Recent research characterizes student engagement as the relationships with peers, sponsors, teachers, and athletic coaches (Williams et al., 2023). These relationships make up the affective aspect of student engagement. Behavioral engagement comprises aspects of student engagement such as attendance, behavior, and discipline. Lastly, feelings of motivation and a sense of belonging constitute cognitive engagement.

Cognitive engagement is essential because a positive relationship exists between student interest in the curriculum and engagement in learning activities associated with that given curriculum (Williams et al., 2023). This is further relevant because students can perform better with a curriculum they are not necessarily interested in if there is some other aspect of school, namely extracurricular activities, holding the students' interest.

Research Methods and Design Overview

This quantitative study obtained student engagement data from the 2021-22 academic year for ninth-grade students at one Northwest Arkansas junior high school in

the form of attendance and discipline data. The data were retrieved from the school's student information system (SIS). The collection of student attendance and discipline data allowed the examination of the level of student engagement.

Academic achievement was measured by examining ACT Aspire reading scores for all ninth-grade students at one Northwest Arkansas junior high school. ACT Aspire Reading scores broken down by demographics allowed for further examination of academic achievement by gender and ethnicity.

Research Questions and Hypotheses

The purpose of this study was to determine the relationship between student engagement as defined by the number of days of attendance and discipline referrals during the 2021-22 school year for the ninth-grade students in one Northwest Arkansas junior high school and student academic success as measured by raw scores on the ACT Aspire Reading Assessment. The following research questions and hypotheses guided the study:

RQ1: Is there a statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school?

$H_0$1: There is no statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

RQ2: Is there a statistically significant relationship between student discipline and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school?

$H_0$2: There is no statistically significant relationship between student discipline and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

RQ3: Do attendance, discipline, gender, and ethnicity predict ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school?

$H_0$3: Attendance, discipline, gender, and ethnicity do not predict ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

Significance of the Study

The significance of this study lies in the results that may contribute to the vast literature relating to student engagement and its impact on student academic success. For the school participating in this study, it reflected how those ninth-grade students are performing academically and how their level of student engagement is impacting that success or lack of success. The results may provide this school and other similar schools with a better understanding of how these variables relate and provide an impetus for administrators and teachers to develop ways to increase student engagement and improve student academic success. In addition, by including gender and ethnicity in the analysis, it provided information that may assist in personalizing support based on the individualized needs of students through disaggregation of data.

Reading scores were used in this study to reflect overall student academic success due to the importance that reading ability plays in overall learning (Bowers & Schwarz, 2018). Chronically absent students have experienced so much learning loss that grade-level reading standards become more challenging to maintain, regardless of individual subject area (Bowers & Schwarz, 2018). This study sought to determine how detrimental

chronic absenteeism is to academic achievement and the importance of students being present in the classroom.

Finally, this study may contribute to existing knowledge by advising educators and parents that students perform better if they have good attendance and discipline rates, thereby leading these stakeholders to seek solutions to the problem of low attendance rates and reducing the number of discipline referrals in the schools.

Delimitations

This study examined and collected data from one grade level of one junior high school in one area of Arkansas. The study does not account for additional outside influences that may impact the standardized testing data collected, such as socioeconomic status and quality of home life. The scores that were used are from ninth grade only. The demographics only include gender and ethnicity. The indicators only include attendance and discipline.

Limitations

The scope of this study was narrow, and the results may not be generalizable to other geographical locations with differing demographics. Therefore, the results may only reflect the school that participated in the study. Although the results may partially align with other geographical areas of Arkansas, the process and investigative direction are transferable.

Definitions of Terms

- *ACT Aspire*: end-of-year online summative assessment for grades 3-10 in English, Reading, Math, Science, and Writing (Learning Services, 2022).

- *Affective engagement*: the emotional value a student holds toward their education. This can be affected by curriculum interest, safety, relationships with teachers and peers, parent support, a sense of belonging, and the perception of school as valuable (Fisher & Frey, 2021).
- *American College Testing (ACT)*: A standardized college admissions test that comprises four subject areas, including English, Math, Reading, and Science. Scoring ranges from one to thirty-six.
- *At-risk students*: students who have specific demographic characteristics such as living in a single-parent home, being a minority, having limited English language proficiency, receiving at least one academic intervention, frequent absenteeism, retention in one or more grades, severe behavior problems, low academic performance, low socioeconomic status, and drug and alcohol use are indicators of an at-risk student (Rieg, 2007).
- *Behavioral engagement*: the observable act of students involved in learning, characterized by school attendance, class participation, and classroom behavior (Fisher & Frey, 2021).
- *Breadth of involvement*: the number of extracurricular activities a student participates in.
- *Child nutrition*: federally assisted meal program operating in public and nonprofit private schools and residential child care institutions. It provides children nutritionally balanced, low-cost, or free breakfast and lunch each school day.

- *Co-curricular activity*: a school-sponsored activity, program, or learning experience that complements the school's academic curriculum (Abro et al., 2018).
- *Cognitive engagement*: the extent to which students are willing and able to take on the learning task (Fisher & Frey, 2021). This can be demonstrated through time investment in learning.
- *Culturally responsive instruction*: using students' customs, characteristics, experience, and perspectives to improve classroom instruction.
- *Depth of involvement*: the amount of time or intensity level a student dedicates to an extracurricular activity
- *Effective school*: an effective school has received an A or B letter grade from the Arkansas Department of Education
- *Extracurricular activity*: a school-sponsored activity that students are productively involved with outside of the classroom, including academic (i.e., performing arts, student government, and yearbook) and nonacademic (i.e., sports, vocational clubs, service clubs, and hobby clubs) (Palmer et al., 2017).
- *Literacy*: the student's ability to read and write, often identified by a standardized assessment
- *Local control*: a school part of a school district that is governed by a locally elected school board
- *Low achieving*: for this study, a low achieving school has received a D or an F letter grade from the Arkansas Department of Education based on the seventeen modules used to produce a letter grade (Learning Services, 2022)

- *Poverty*: poverty can be defined as follows: (a) based on the federal government's formula of the poverty line, (b) based on free and reduced lunch formulas that vary from state to state, or (c) based on particular characteristics and situations people find themselves in because of the amount of monetary and related material capital they have or lack (Burney & Beilke, 2008).
- *School safety*: schools and school-related activities where students are safe from violence, bullying, harassment, the sale or use of illegal substances on school grounds, and other emergencies.
- *School turnaround*: "Turnaround" refers to quickly realizing academic achievement in schools that have long been failing schools (Peck & Reitzug, 2014).
- *Secondary schools*: For this study, a secondary school is a school that serves grades 9-12 (Danzig & Aljarrah, 1999).
- *Social-emotional learning*: a methodology that helps students better comprehend their emotions and demonstrate empathy for others
- *State control*: a school part of a district identified as low achieving by the Arkansas Department of Education (ADE) for three consecutive years. ADE has dissolved the locally elected school board.
- *Student engagement*: the student's degree of interest in their education, identifiable by data indicators such as attendance, discipline, and academic achievement (Dickinson et al., 2021) (Li et al., 2023).

Assumptions

Student attendance and student discipline make up student engagement. Student achievement improves as student engagement improves. This is true regardless of the ethnicity and gender of students. Reading proficiency is an indicator of overall academic achievement. Even for math, students must understand the instructions to perform math operations. All other core subjects are reading intensive, including English Language Arts, Science, and Social Studies. For this reason, reading proficiency indicates overall academic achievement, which is why ACT Aspire Reading scores were included in this research. The data provided included all students' best efforts in taking the reading ACT Aspire Assessments.

Chapter Summary

Student engagement reflects a student's passion or interest level toward their education (Li & Xue, 2023). Student engagement can be reflected in the quality of a student's relationship with family, school staff, and peers (Montero-Sieburth & Turcatti, 2022). In terms of school data, student engagement can be measured using attendance data and discipline data. Discipline data are relevant to attendance data because disciplinary consequences often include removing the student from the classroom (Kennedy-Lewis & Murphy, 2016).

A suspension is an example of discipline data that includes removing the student from the classroom (Kennedy-Lewis & Murphy, 2016). This is significant because students often receive different instruction quality while suspended, contributing to learning loss. Learning loss occurs when the student does not receive learning opportunities in the classroom (Kennedy-Lewis & Murphy, 2016).

Student engagement was determined by student attendance and discipline referral data. Students absent less than five percent of the school year were at a low risk of chronic absenteeism. Students absent from 5% up to 10% of the school year were at moderate risk of chronic absenteeism. Students who were absent 10% or more of the school year were considered to be in the category of chronic absenteeism. As it related to this study, student discipline was associated with absenteeism. The number of out-of-school suspension days due to student discipline was a construct in this study.

Organization of the Study

This correlational, quantitative study disaggregated student engagement data for ninth-grade students at a northwest Arkansas junior high school from the school's student information system (SIS). These data were from the 2021-2022 school year to identify possible trends between attendance, discipline, and academic achievement. Academic achievement was explicitly measured by examining ACT Aspire reading scores. The collection of student attendance and discipline data from the school's student information system (SIS) allowed for the examination of the level of student engagement, while ACT Aspire Reading scores broken down by demographics permitted the analysis of academic achievement by gender and ethnicity.

In Chapter 2, the researcher reviewed relevant literature covering the following topics: ACT Aspire, literacy, student engagement, student attendance, and student discipline. The ACT Aspire is a summative assessment that tests students in Mathematics, English Language Arts, Science, Reading, and Writing. As per this study, literacy was the degree to which students tested in Reading.

In Chapter 3, the researcher describes the research design and methods used to conduct the study. This quantitative study examined data from the school's student information system (SIS) and ACT Aspire testing portal. These databases provided student demographic data, ethnicity, and gender without identifying individual students by name. The data were collected from the most recent testing window during the 2021-2022 school year to identify possible relationships between student attendance, student discipline, and ACT Aspire reading scores by ethnicity and gender. The data collection from the most recent school year's testing window allowed for the timeliest data available about this school. The chapter also details the instrumentation, data analysis, and results from the study.

In Chapter 4, the researcher presents the results from the statistical analysis and how those results addressed the three guiding research questions. Chapter 5 presents the conclusions and implications of those results and provides recommendations for practice for school leaders and further study. Finally, the researcher provides an overall summary and reflection on the study in that chapter.

CHAPTER II

REVIEW OF THE LITERATURE

The literature review was organized to reflect the relationship between student engagement, reading proficiency, and overall academic achievement across subgroups. EBSCOHost was used to locate peer-reviewed articles using search terms applicable to the research. These terms included student engagement, attendance, absenteeism, chronic absenteeism, at-risk, discipline, out-of-school suspension, reading comprehension, reading proficiency, and lost instructional time. Research related to student engagement, absenteeism, and chronic absenteeism were reviewed in relation to student attendance. The terms at-risk, discipline, and out-of-school suspension also affect attendance through consequences of student behavior. Absenteeism due to student behavior, in turn, affects reading comprehension, reading proficiency, and overall academic achievement.

At-Risk Students and School Accountability

Much research has been conducted on at-risk students and school accountability. An at-risk student has specific predispositions usually align with lower academic achievement (Rury et al., 2022). These predispositions include coming from a single-parent home, being a minority, having low socioeconomic status, being an English language learner, having been previously retained, frequent absenteeism, severe behavior problems, homelessness, and teen parenthood (Rury et al., 2022).

Along the same lines, a school with a high percentage of at-risk students will need more intensive support to meet its at-risk students' needs. These supports include safety and security at school, meal programs, academic intervention, social and emotional instruction, and adequate housing (Hughes & Adera, 2006).

Concerning school accountability in Arkansas, the school environment, student performance in response to academic intervention, and student performance in response to social and emotional instruction are all school accountability measures (Lasater et al., 2021). The performance of at-risk students has been studied, but this research focused on how at-risk students affect school accountability from the lens of student engagement.

Affective, Cognitive, and Behavioral Student Engagement

Affective, behavioral, and cognitive engagement are types of student engagement with distinct characteristics (Fisher & Frey, 2021). Research shows a strong correlation between affective, behavioral, and cognitive engagement and academic achievement. Affective engagement concerns students' emotional value toward their education (Fisher & Frey, 2021). This is not to be confused with social-emotional learning, which involves teaching students' general emotional maturity, not necessarily toward curriculum or school (Neth et al., 2020).

One aspect of affective engagement is the student's interest in the curriculum (Fisher & Frey, 2021). Best practices call for teachers to use instructional strategies that engage student interests regardless of ethnicity, gender, and other identifiers (Abacioglu et al., 2020). This is culturally responsive teaching (Abacioglu et al., 2020). At the same time, the curriculum is the curriculum, and students have a particular intrinsic motivation to want to learn it. Intrinsic motivation can fluctuate and can be positively affected by a healthy extracurricular activity experience (Daniels, 2017).

Safety is another facet of affective engagement (Fisher & Frey, 2021). Students face many issues regarding school safety, including bullying, cyberbullying, and the school's physical environment (Varjas et al., 2009). Students feel safe at school, which

has a physical component addressed by school staff and an emotional component built through extracurricular activity participation (Varjas et al., 2009). One of the most impactful aspects of affective engagement is the relationship-building students' experience with staff and peers (Li et al., 2022). These relationships create a sense of belonging, intrinsic motivation, and value in school because of the relationships created there (Li et al., 2022).

Behavioral engagement is the observable act of students involved in learning. Behavioral engagement is characterized by attendance and behavior (Fisher & Frey, 2021). Concerning extracurricular activities, there is usually an attendance requirement and a behavior requirement to participate (Shaffer, 2019). Naturally, students participating in extracurricular activities tend to have a higher attendance rate and a lower rate of discipline infractions than students who do not participate in extracurricular activities (Shaffer, 2019).

Cognitive engagement is the extent to which students are willing and able to take on the learning task (Fisher & Frey, 2021). Extracurricular activities serve as a motivational factor for some students in the sense that students understand they must put forth effort in the classroom to be able to participate in extracurricular activities (Power et al., 2009). Students may also find themselves in before-school, after-school, or weekend tutoring to maintain eligibility for extracurricular activity participation (Power et al., 2009). Either way, students participating in extracurricular activities display academic behaviors consistent with a student who intends to stay in school, unlike academic behaviors of students at risk of dropping out of school (Power et al., 2009).

This study investigated affective, behavioral, and cognitive engagement and how these three engagement types impact academic outcomes through the scope of extracurricular activity participation. The study examined whether extracurricular activities sharpen students' affective, behavioral, and cognitive engagement outcomes.

Accountability in Arkansas Schools

School Performance

All Arkansas schools serving grades 3-10 must administer the ACT Aspire. This summative assessment is given at the end of the school year in a specific testing window that begins in April and ends in May. Students are tested in English, Reading, Math, Science, and Writing. Schools should aim to test every student in their respective grade, with a grace of 5%, meaning schools should test 95% of students in all five areas in every grade that the school serves from grades 3-10. Schools have flexibility within a testing window, and all five tests take approximately five hours to complete. Schools must also offer accessibility features for all students.

This is usually not a problem as there are Arkansas state and federal requirements for schools to offer these features to students any other day of the school year. Schools must also provide accommodations for qualifying students. Like accessibility features, schools already offer accommodations to qualifying students, so there will be no changes concerning ACT Aspire testing. With any other school-wide function, the best practice in the administration of the ACT Aspire is for the Special Education teachers and Special Education director to be involved in the planning process (Essex, 1962).

Schools receive a predicted score for the ACT for students in grades 7-10 based on the student’s performances on the five parts of the ACT Aspire. After receiving these

data, the best practice is for schools to provide ACT Prep interventions based on the student's needs in each subject area (Ray & Graham, 2021). There are a few ways that high school students can receive ACT Prep intervention support. Virtual Arkansas offers a course entitled ACT Prep Resources. This course includes diagnostics tests, drills, videos, and content aligned to the reading, writing, math, science, and English portions of the ACT. Many high schools offer summer ACT Prep courses.

Teachers provide intervention in reading, writing, math, science, and English so that students have a deeper understanding of standards for these content areas. Many colleges and universities also offer free ACT prep summer courses. This serves students by putting them in a position to score better on the ACT and as a recruiting tool for these postsecondary institutions. ACT offers learning tools and a practice test for students interested in scoring higher on the ACT.

According to the modules, this applies to the college readiness module in keeping with school improvement. Consequently, this is an example of modules being interdependent upon one another and having an exponential effect on the overall school letter grade. Lastly, schools must set their ACT Aspire testing schedule within the testing window.

School Quality and Student Success

There are 11 indicators used to determine school quality and student success. The indicators are on a point system. Higher school quality indicators receive more points, while lower ones receive fewer. Schools receive a total score based on the points accumulated by each student. Points are accumulated for each student for each indicator

to produce a mean score, which is then used to calculate a value for overall school quality and student success.

Student Engagement

Concerning the Arkansas Department of Education, student engagement is the first indicator of school quality and student success. Student engagement measures absenteeism. One point is assigned for each student absent less than 5% of the school year. This student is considered low-risk. Half a point is given for each absent student, anywhere from 5% to 10% of the school year. This student is considered a moderate risk. Zero points are assigned for the absent student for over 10% of the school year. Points are accumulated for each student for this indicator to produce a mean score, which is then used to calculate a value for overall school quality and student success.

Concerning the operational definition of student engagement, attendance and discipline are the two indicators of student engagement. Attendance refers to the presence or absence of the student at school and in the classroom. Discipline data is relevant because it often affects attendance. Discipline consequences that affect attendance include detention, in-school suspension, out-of-school suspension, and expulsion.

Reading at Grade Level

Reading at grade level is another school quality and student success indicator. Reading at grade level is measured in grades three through ten. Students are assigned one point for scoring at ready or exceed and zero points for scoring at close or not ready. Reading is one of the five ACT Aspire tested areas. Points are accumulated for each student for this indicator to produce a mean score, which is then used to calculate a value for overall school quality and student success.

The American College Test

The American College Test, or ACT, indicates school quality and student success. The ACT contains multiple-choice questions in English, Math, Reading, and Science. The English portion of the ACT measures the student's ability to make decisions to revise and edit short texts and essays in different genres. Students have forty-five minutes to answer seventy-five questions on the English portion of the ACT. The Math portion of the ACT measures the student's mathematical skills typically acquired in courses up to the beginning of grade 12.

Students have 60 minutes to answer 60 questions on the Math portion of the ACT. The Reading portion of the ACT measures the student's ability to read closely, reason logically about texts using evidence, and integrate information from multiple resources. Students have 35 minutes to answer 40 questions on the Reading portion of the ACT. The Science portion of the ACT measures the student's interpretation, analysis, evaluation, reasoning, and problem-solving skills required in Biology, Chemistry, Earth/Space Sciences, and Physics. Students have 35 minutes to answer 40 questions on the Science portion of the ACT. The Writing portion of the ACT is optional. The Writing portion of the ACT measures the student's writing skills taught in high school English classes and entry-level college composition courses. Students have 40 minutes to respond to one prompt.

Students can send their ACT scores directly to colleges and various scholarship agencies. Students will receive a score between one and 36 on each test. These scores are averaged to calculate one composite score. There is also a super score. There is no limit to the number of times students can take the ACT. A super score is a composite score

calculated by taking the highest individual tested area of each ACT session the student has ever earned. Some postsecondary institutions accept super scores for admission, while others do not accept super scores for admission. Super scores are not considered in determining the school letter grade. Points are accumulated for each student for this indicator to produce a mean score, which is then used to calculate a value for overall school quality and student success.

The ACT Readiness Benchmark

The ACT Readiness Benchmark is another school quality and student success indicator. This indicator follows the super score model, meaning individually tested areas for all testing sessions from the previous three years are considered in calculating ACT readiness. Students are assigned one-half of a point for ACT Reading scores of 22 or higher. Students are assigned one-half of a point for ACT Math scores of 22 or higher. Students are assigned one-half of a point for ACT Science scores of 23 or higher. Students who have not scored the minimum score for each tested area receive zero points toward the student's total earned points. Points are accumulated for each student for this indicator to produce a mean score, which is then used to calculate a value for overall school quality and student success.

The 2.8 GPA on a 4.0 scale

The 2.8 GPA on a 4.0 scale is another school quality and student success indicator. The student's final grade point average is pulled at the end of the student's senior year. Students with a grade point average equal to or greater than 2.8 receive one point toward their total earned points. Students with a grade point average of less than 2.8 receive zero points toward their total earned points. Points are accumulated for each

student for this indicator to produce a mean score, which is then used to calculate a value for overall school quality and student success.

On-time Credits

On-time credits are another school quality and student success indicator. A student receives one point if he earns 5.5 or more credits in the first year of high school, 11 credits by the end of the second year, and 16.5 credits by the third year. Students who have recovered credits after the fact do not receive a point for on-time credits. Points are accumulated for each student for this indicator to produce a mean score, which is then used to calculate a value for overall school quality and student success.

Advanced Placement, International Baccalaureate, or Concurrent Credit Courses

A student receives one point if the student has earned at least one advanced placement, international baccalaureate, concurrent credit, or ACE course in grades 9-12. Students who have not yet earned this credit as ninth through eleventh graders are not missing this point because this indicator is only exercised during what should be the student's last semester of high school. Points are accumulated for each student for this indicator to produce a mean score, which is then used to calculate a value for overall school quality and student success.

Student Attendance and Student Engagement

Student attendance is a critical factor in student engagement. Student attendance is the presence of the student at school and in the correct classroom at the appropriate time (Fallis & Opotow, 2003). It is important to note that student attendance refers to the student being in the correct classroom at the appropriate time because the student can be at the school campus but not in the classroom (Fallis & Opotow, 2003). A student can

intentionally skip a class by hiding on campus outside, in a class not assigned to the student at the time, in or around an athletic facility on campus, in the media center, roaming the halls, or several other places (Fallis & Opotow, 2003).

This action is commonly known as skipping and is not consistent with positive attendance action (Fallis & Opotow, 2003). Skipping class is described in one study as "the slow-motion process of dropping out made class-by-class and day-by-day in students' daily lives (Fallis & Opotow, 2003)." A student's grades, on-time credits, and the likelihood of graduation are significantly impacted by moderate absenteeism (Allensworth & Evans, 2016). The construct of on-time credits concerns the pace at which students earn credits. The Arkansas Department of Education's effectiveness system accounts for every student and awards the school full credit for the student who has earned five and a half credits per school year. That is the minimum expectation, but students can earn more credits per school year. However, earning five and a half credits per school year is unlikely if the student falls into the chronic absenteeism category, meaning the student misses ten percent or more of the school year.

Absenteeism is a more predictive graduation factor than race, gender, or poverty (Allensworth & Evans, 2016). In one study, course attendance is eight times more predictive of course failure in the freshman year than 8th-grade test scores (Allensworth & Evans, 2016). This means that the data shows a student has a better chance to be successful statistically speaking if the student is present, even more so than eighth-grade test scores indicating the student is academically ready for the next grade level. The same study shows that one week's worth of absences per semester is associated with a 20% decline in the probability of graduating from high school (Allensworth & Evans, 2016).

Middle school students who are chronically absent have a 50% chance of veering off track in high school. These students have little chance of graduating without dramatically changing their educational experience (Allensworth & Evans, 2016). Tardiness is also a part of attendance. A tardy student has suffered learning loss by missing instruction during tardiness, and chronic tardiness means more substantial learning loss (Tyre et al., 2011). Therefore, tardiness is a part of student attendance.

There is existing research on the relationship between attendance and student engagement. Higher attendance usually means a higher level of student engagement (Herman, 2012). The problem with tardiness and excessive absenteeism is that they produce learning loss. One way that significant learning loss occurs is when a student is absent during instruction (Roby, 2004). Tier 1 instruction is the initial instruction given to students by the teacher. There are intervention and remediation, which are small group or individual follow-up instructional sessions, but the initial instruction is what students miss when they are tardy or absent. This can be in the form of tardiness or being absent altogether.

There is also existing research on the relationship between discipline and extracurricular activity participation on student engagement. Discipline infractions may result in removal from the classroom through suspension or expulsion, where Tier 1 instruction is initially provided (Kennedy-Lewis & Murphy, 2016). The problem with excessive discipline infractions is the consequences that come with them, sometimes removal from the classroom, thereby causing learning loss (Kennedy-Lewis & Murphy, 2016). Fewer discipline infractions usually mean a higher level of student engagement,

while extracurricular activity participation usually means more student engagement (Dickinson et al., 2021).

Student Discipline and Student Engagement

Student discipline is a critical factor in student engagement. The prevalence of learning loss when consequences are issued to maintain discipline in the school is an issue with student engagement (Kennedy-Lewis & Murphy, 2016). Many forms of school discipline result in learning loss by removing the student from the classroom, causing the student to miss Tier 1 instruction. Ironically, a student may receive a consequence of an out-of-school suspension for skipping class. School discipline should act to remedy the behavior, but out-of-school suspensions add to learning loss. Many education experts argue against out-of-school suspensions altogether (Kennedy-Lewis & Murphy, 2016).

Detentions, in-school suspensions, out-of-school suspensions, and expulsions are potential consequences for tardiness and chronic absenteeism. Detentions are usually served before, during, or after school. If the detention is to be served during school, it should be during the student's time that does not require them to miss instruction (Welsh, 2022). For example, recess and lunch are times when students can serve detention without missing instruction. The detention is meant to serve as an inconvenience to the student, which is intended to motivate the student to avoid the inconvenience of detention in the future by not being tardy anymore (Welsh, 2022). The opposite is true for in-school suspensions and out-of-school suspensions in many cases. In-school suspensions can be more effective than out-of-school suspensions for students who enjoy the social aspects of being at school (Welsh, 2022). In-school suspension is inconvenient because students are isolated from the rest of the student body and school activities (Welsh, 2022). This is

meant to motivate the student to avoid the inconvenience of in-school suspension by correcting the behavior that landed the student in in-school suspension, which in this case is tardiness.

This may only work for some students (Welsh, 2022). Another issue with in-school suspension is the quality of instruction students receive while serving time in in-school suspension (Welsh, 2022). Students are usually given review work, which prevents new learning (Welsh, 2022). Even if the student is given classwork current to the regular class setting, the student misses the Tier 1 instruction given in the classroom, including all of the learning activities and supplemental resources that are a part of the Tier 1 instruction (Welsh, 2022).

In-school suspension is essentially a learning loss (Welsh, 2022). Out-of-school suspension is also a learning loss, but not as complex. Many students view out-of-school suspension as a vacation day, especially students who do not have parental support at home (Welsh, 2022). It is not viewed as a punishment at all. Students receive no instruction during out-of-school suspension and will have missed a significant amount of the curriculum upon return (Welsh, 2022). For these reasons, schools should work to minimize or eliminate both in-school and out-of-school suspensions by addressing the reasons behind the actions that cause students to be assigned these consequences (Maag & Katsiyannis, 2010).

Wraparound services are a construct that can be used to remedy many underlying issues causing tardiness and chronic absenteeism. The concept of a school providing wraparound services is the idea of the school providing resources to the students outside of instruction (Maag & Katsiyannis, 2010). These resources can include mental,

emotional, and social health support (Maag & Katsiyannis, 2010). Wraparound services include physical support for homeless students and students from low-income families regarding food, clothing, academic supplies, job placement, and housing (Basford et al., 2021). Students needing wraparound services do not meet their most basic needs outside of what the school can offer, which is the foundation of Maslow's Hierarchy of Needs (Basford et al., 2021).

A school providing wraparound services can fill a student's void and minimize or eliminate discipline issues for that student (Basford et al., 2021). For example, a student may skip a class to avoid bullying for wearing a dirty school uniform. The student may not have a working washer and dryer at home. Wraparound services include giving the student a clean set of school uniform clothes for the week, washing the dirty set, and then returning this set to the student clean for the next week. For this student, a need has been met, a discipline issue has been resolved, and learning loss has been eliminated by providing wraparound services.

Attendance and Reading Scores

Reading scores are indicative of attendance (Gottfried, 2019). Chronic absenteeism is a category of absenteeism achieved when a student has missed 10% or more of the school year. Chronically absent students usually have lower reading scores (Gottfried, 2019). Reading scores are affected by chronic absenteeism because students miss grade-level vocabulary when grade-level standards are taught during Tier 1 instruction, which is simply the initial instruction provided to the class as a whole (Grasley-Boy et al., 2022). During Tier 1 instruction, the teacher introduces new vocabulary during the lesson). While students in the classroom are learning new

vocabulary presented in the lesson, the suspended student is missing the lesson, thereby missing the growth in reading comprehension skills. The students in the classroom continue to grow with each engaging lesson, while the suspended student continues to get further behind with each missed day of instruction (Grasley-Boy et al., 2022).

Students who are not chronically absent usually have higher reading scores (Gottfried, 2019). Students who are not chronically absent are present in the classroom when the teacher introduces new grade-level vocabulary in the lesson. There is a greater likelihood that the present student will grasp the new vocabulary than the likelihood of the absent student learning the new vocabulary (Grasley-Boy et al., 2022). Concerning academic achievement, the present student performs much better than the chronically absent student (Grasley-Boy et al., 2022).

Reading scores indicate overall academic success (Lapasau et al., 2022). A student reading on grade level usually achieves higher in all other subject areas than those not reading on grade level. English Language Arts, Social Studies, and Science are all reading-intensive subject areas, which is why the student's ability to read on grade level impacts overall academic achievement. However, reading on grade level also correlates with higher math scores (Lapasau et al., 2022). A student must understand what a math question or word problem asks them to do, how to manipulate the numbers, or what operation to perform to succeed in math. In this way, reading comprehension or the ability to read on grade level is a foundational tool for students to have overall higher academic achievement versus not reading on grade level (Lapasau et al., 2022).

Effects of Lost Instructional Time on Reading Scores Due to Discipline

Discipline data indicates reading scores due to the learning loss that occurs from disciplinary consequences (Arcia, 2006). Suspensions require students to be removed from the classroom. This results in learning loss because the student is absent during instructional time (Arcia, 2006). As a part of learning loss, students miss out on the grade level standards being taught as a part of the curriculum presented to students during instruction. A student who misses the introduction of new, grade-level, content-specific vocabulary will only fall behind if the student receives the same quality of instruction missed during the suspension, which is unlikely. For this reason, as disciplinary infractions increase, reading scores decrease (Arcia, 2006).

Chapter Summary

The literature review details student engagement. Student engagement consists of student attendance and student discipline. The results of student discipline often impact student attendance, compounding the issue of a lack of student learning outcomes. Affective, behavioral, and cognitive engagement are student actions and feelings toward school. Extracurricular activities are tools schools can use to improve student engagement. With high student engagement comes high student achievement. An indicator of student achievement is reading comprehension. The ACT Aspire test measures reading comprehension. All of these constructs come together to produce a school's overall effectiveness.

The following chapters will entail all of the data and the data's implications of the constructs above. The data will include student attendance, discipline, and ACT Aspire

reading scores, all broken down by ethnicity and gender. This data will show the relationship between these constructs.

CHAPTER III

METHODOLOGY

This quantitative study sought to determine the relationship between student engagement and academic achievement at an urban junior high school in Northwest Arkansas. Student engagement was measured by the level of attendance and the number of discipline referrals for students in this school. The purpose of this study was to identify whether there is a relationship between student engagement and academic achievement as identified by the individual student scores on the ACT Aspire Reading assessment. In addition, the study sought to determine if there is an effect of gender and ethnicity upon any relationship between student engagement and academic performance on the ACT Aspire Reading assessment.

Student engagement is students' passion or interest level toward their education (Li et al., 2023). Student engagement can be reflected in the quality of a student's relationship with family, school staff, and peers (Montero-Sieburth & Turcatti, 2022). Student engagement can be reflected in the student's effort, such as double-checking school work after completion, seeking tutoring, and extending learning beyond the classroom (Shin & Bolkan, 2021). Student engagement is the student's mentality concerning the relevance of the curriculum and school to the student's life outside and after high school (Rose & Bowen, 2021). Concerning data, student engagement is reflected in several ways, including attendance and discipline data. For this study, student engagement will serve as the dependent variable. Attendance and discipline data will serve as independent variables. The research will investigate the problem of student underperformance as it relates to student engagement.

Research Questions and Hypotheses

The purpose of this study was to determine the relationship between student engagement as defined by the number of days of attendance and discipline referrals during the 2021-22 school year for the ninth-grade students in one Northwest Arkansas junior high school and student academic success as measured by raw scores on the ACT Aspire Reading Assessment. The following research questions and hypotheses guided the study:

RQ1: Is there a statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school?

$H_0$1: There is no statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

RQ2: Is there a statistically significant relationship between student discipline and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school?

$H_0$2: There is no statistically significant relationship between student discipline and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

RQ3: Do attendance, discipline, gender, and ethnicity predict ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school?

$H_0$3: Attendance, discipline, gender, and ethnicity do not predict ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

Research Methodology

This quantitative study examined data from the school's student information system (SIS) and ACT Aspire testing portal. These databases will provide student demographic data, namely ethnicity and gender, without identifying individual students by name. The data were collected from the most recent testing window during the 2021-2022 school year to identify possible relationships between student attendance, student discipline, and ACT Aspire reading scores by ethnicity and gender. The data collection from the most recent school year's most recent testing window allowed for the timeliest data available about this school.

Research Design

The purpose of this study was to determine if there is a relationship between student engagement and academic performance in reading among ninth-grade students at one Northwest Arkansas junior high school. The variables examined include student attendance, discipline, gender, and ethnicity as predictor variables, and raw scores on the 2021-22 ACT Aspire Reading Assessment for the ninth-graders in the participating middle school were used as the outcome variable.

After receiving approval from the Arkansas Tech University Institutional Review Board (IRB) (See Appendix A) and permission from the school district to retrieve the required data (See Appendix B), the researcher proceeded to collect data for the study. The data were collected directly from the school databases by school administrators, and an Excel file containing the data was provided to the researcher.

Since the data were not randomly sampled and the selection of the participating middle school was made through convenience sampling, the purpose of the study was not

to determine a cause and effect between the variables but to investigate the relationships between the variables, to understand the effect of the selected predictor variables on the outcome variable, reading scores.

Correlation and regression were selected as the research methods for this quantitative design. The 2021-2022 school year data was used to identify possible relationships between attendance, discipline, and academic achievement. ACT Aspire Reading scores measured academic achievement. The collection of student attendance and discipline data from the school's student information system (SIS) allowed for the examination of the level of student engagement, while ACT Aspire Reading scores broken down by demographics allowed for the analysis of academic achievement by gender and ethnicity.

After determining whether or not there was a statistically significant correlation between student attendance, student discipline, and ACT Aspire Reading scores, multiple regression analysis was used to assess the predictability of the outcome variable based on the effect size of the predictor variables. Through this statistical method, the researcher determined how much each predictor variable explains the variance in the outcome variable, reading scores.

The researcher determined that the selected research methods and design provided the best procedure for analyzing the collected data and answering the research questions developed for this study.

Population and Sample

The population for this research study included all public Arkansas ninth-grade students. The target population for this research study included one grade level of the

participating Arkansas junior high school. The convenience sample for this study consisted of all ninth-grade students in this participating junior high school who received a score on the ACT Aspire reading assessment during the 2021-22 school year.

Setting

The data were collected from the 2021-2022 ninth-grade class in the selected Northwest Arkansas junior high school. The participating school houses two grade levels with an enrollment of 720. The school's demographic makeup is 65% Hispanic, 18.6% Pacific Islander, 10% White, 2.6% African American, 1.8% Asian, and 1.9% Other. The student population of this school does not reflect the overall demographics of public schools in Arkansas. Due to the high percentage of Hispanic students, it should be noted that 83.6% of the students are English Language Learners (ELL). The relatively high percentage of Pacific Islanders is due to the concentration of Marshallese students who migrated from the Marshall Islands for employment opportunities in the poultry industry.

Compared to the student population for Arkansas in 2021-22, the breakdown was 59.5% White, 19.4% African American, 13.9% Hispanic, 1.8% Asian, 1.0% Pacific Islander, and 4.4% Other. Based on these percentages, the ethnic population of the participating school is not reflective of Arkansas as a whole. The higher percentages of ELL students may have impacted the study results since ELL was not included as a predictor variable.

In terms of the sample population of ninth-grade students in this school, Table 1 provides the percentage of students by ethnicity and gender. Regarding the overall ethnicity percentages, the ninth-grade is representative of the general population of the participating school.

Table 1

Sample Population by Ethnicity and Gender

Ethnicity	Male	Female	Total
Hispanic	121 (48.2%)	130 (51.8%)	251 (100%)
	(66.9%)	(64.7%)	(65.7%)
Pacific Islander	31 (44.3%)	39 (55.7%)	70 (100%)
	(17.1%)	(19.4%)	(18.3%)
White	17 (44.7%)	21 (55.3%)	38 (100%)
	(9.4%)	(10.4%)	(9.9%)
African American	5 (50%)	5 (50%)	10 (100%)
	(2.8%)	(2.8%)	(2.6%)
Asian	4 (57.1%)	3 (42.9%)	7 (100%)
	(2.2%)	(1.7%)	(1.8%)
Other	3 (50%)	3 (50%)	6 (100%)
	(1.7%)	(1.7%)	(1.7%)
Total	181 (47.4%) *	201 (52.6%)	382 (100%)
	(100%) **	(100%)	

Note: *Percentages by Row; **Percentages by Columns.

Instrumentation

The ACT Aspire is the instrument providing data for the outcome variable, student academic performance in this study. The ACT Aspire is a standardized test that measures student academic achievement in grades three through 10. The tested subject areas are English, Math, Reading, Science, and Writing.

The ACT Aspire system will be aligned from elementary to high school, connecting each grade level to the next. This will create a cohesive, comparable, transportable longitudinal system from one state to the next. Teachers and parents can confidently know where each student is on the path to college and career

> readiness at every step. In addition to summative assessments that measure how much students have learned over time, ACT Aspire will include formative assessments that help teachers meet students' learning needs within individual classes throughout the year. The aligned assessments will inform teachers about students' progress toward specific learning standards so they can better tailor their instructional activities and resources to help students learn (New, 2023, p. 1).

Concerning reliability and validity, one part of research posted on the ACT Aspire website states, "In this report, we provide evidence to support Critical Element 3.4 of ESSA Peer Review: "The State has documented adequate validity evidence that the State's assessment scores are related as expected with other variables" (US Department of Education, 2018, p. 47)." Another part of the website reads, "Educators from across the state of Arkansas convened during a four-day workshop and completed an alignment of the ACT Aspire using the overall state standards, ACT Aspire Performance Level Descriptors, and the ACT Aspire test items (Learning, 2023, p. 3)."

Data Sources

Student attendance and student discipline are individual data sets, but both come from eSchool, the school's student information system (SIS). eSchool can run a report for student attendance and a report for student discipline broken down by ethnicity and gender. eSchool can also run a report for student attendance and discipline for a specific time frame. In this case, the time frame will be the first official day of school through the last official day of school for ninth graders during the 2021-2022 school year. This will allow for ascertaining any potential relationship between student attendance and student discipline and ACT Aspire Reading scores by ethnicity and gender. Student attendance is

calculated according to whether the student missed more than or equal to ten percent of the school year. Discipline data is broken down into the number of chronically absent students, the number of in-school suspension assignments, and the number of out-of-school suspension assignments. These assignments can overlap, meaning several more than one student represents one.

Operational Definitions of Variables

Operationally defining a variable involves the specificity of how a variable will be measured. Student attendance is measured by the percentage of a school year the student is present or absent. A student who has missed more than or equal to 10% of the school year is considered a chronically absent student. A student who has missed less than ten percent of the school year is not considered chronically absent.

Concerning discipline, data are collected by the number of in-school or out-of-school suspension assignments per student. ACT Aspire scores are on a numerical scale, similar to the traditional 0-100 grading scales. These scores fall within the categories, which are “In Need of Support,” “Close,” “Ready,” or “Exceeding.”

Data Collection

The data consisted of archived data maintained in eSchool, the school’s student information system (SIS). Student data can be pulled from eSchool and the school ACT Aspire portal with individual student names redacted, or the report can be designed in such a way as to only draw statistics without drawing student names. This data will be pulled by one of the current administrators. eSchool and the ACT Aspire portal can run reports and redact any particular student identifiers. For this study, the administrator pulling the data report redacted student names. Gender, ethnicity, and scores will be

visible in the data report. The data were provided in an Excel file and uploaded into SPSS software for statistical analysis.

Data Analysis

The purpose of this study was to determine the relationship between student engagement as defined by the number of days of attendance and discipline referrals during the 2021-22 school year for the ninth-grade students in one Northwest Arkansas junior high school and student academic success as measured by raw scores on the ACT Aspire Reading Assessment. Table 2 presents the variables and statistical analysis used to answer each of the research questions.

The following research questions and hypotheses guided the study:

RQ1: Is there a statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school? RQ1 was answered using a Spearman Rho correlation with the two variables, attendance and ACT Aspire Reading scores. Spearman correlation was used after it was determined that the data failed the pretest related to homoscedasticity. This analysis determined if there was a positive or negative correlation between the two variables and whether the hypothesis was supported or unsupported.

$H_0$1: There is no statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

Table 2

Variables Analyzed and Statistical Analysis Used for Each Research Question

Research Question	Variables Tested	Statistical Analysis
RQ1: Is there a statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores?	Student Attendance ACT Aspire Reading Scores	Spearman Correlation
RQ2: Is there a statistically significant relationship between discipline and ninth-grade ACT Aspire Reading scores?	Student Discipline ACT Aspire Reading Scores	Spearman Correlation
RQ3: Do attendance, discipline, gender, and ethnicity predict ninth-grade ACT Aspire Reading scores?	Outcome Variable: ACT Aspire Reading Scores Predictor Variables: Student Attendance Student Discipline Gender Ethnicity	Multiple Linear Regression

RQ2: Is there a statistically significant relationship between student discipline and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school? RQ2 was answered using a Spearman Rho correlation with the two variables, attendance and ACT Aspire Reading scores. Spearman correlation was used after it was determined that the data failed the pretest related to homoscedasticity. This analysis determined if there was a positive or negative correlation between the two variables and whether the hypothesis was supported or unsupported.

$H_0$2: There is no statistically significant relationship between student discipline and ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

RQ3: Do attendance, discipline, gender, and ethnicity predict ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school? RQ3 was answered by using multiple linear regression to determine if student attendance, discipline, gender, and ethnicity predict ninth-grade ACT Aspire Reading scores.

$H_0$3: Attendance, discipline, gender, and ethnicity do not predict ninth-grade ACT Aspire Reading scores in the participating Northwest Arkansas junior high school.

Assumptions

The following assumptions were present in the study:

1. All students attended the school for the entirety of the school year. Transfers kept the same attendance record before starting at the school to be studied.
2. Discipline data concerning in-school suspensions, out-of-school suspensions, and expulsions does not overlap.
3. All students actively participate in ACT Aspire Reading testing and have scores on file.
4. All students registered for school listing the correct ethnicity and have not changed it.
5. All students registered for school listing the correct gender and have not changed it.

Ethical Assurances

After receiving approval from the researcher's dissertation committee, an application for research approval was submitted to the ATU Institutional Review Board (IRB) before beginning to collect data for the study. The data to be gathered consisted of archived data maintained by the participating school, and the ATU IRB granted expedited

approval (Appendix A). The student data were provided in an Excel file with all identifying information masked to maintain the anonymity of the participants.

Chapter Summary

The purpose of the study was to examine the relationship between student attendance and student discipline on ACT Aspire Reading scores by ethnicity and gender. This study examined whether sound student attendance and discipline yield higher academic achievement. ACT Aspire Reading scores measured academic achievement. These student data were further examined using ethnicity and gender. The academic achievement data will be measured from the ninth graders of the 2021-2022 school year.

CHAPTER IV

DATA ANALYSIS AND RESULTS

The purpose of this chapter is to present the results from analyzing the data collected and addressing the research questions and hypotheses presented in previous chapters. This will be accomplished in this chapter by restating the problem statement, methodology, and research questions and then demonstrating how the analysis answers the research questions and hypotheses.

Student engagement is the passion or interest level that students have toward their own education and can be reflected in the quality of a student's relationship with family, school staff, and peers (Li & Xue, 2023; Montero-Sieburth, 2022). It can also be reflected in the effort a student puts forth, such as double-checking school work after it is completed, seeking tutoring, and extending learning beyond the classroom (Shin & Bolkan, 2021).

Student engagement is reflective of the student's perception of the relevance of the curriculum and school to the student's life outside of school and life after high school and can be seen in the effort to achieve academic success (Rose & Bowen, 2021). If student engagement is low or non-existent, it is to be assumed that student academic success will suffer. Therefore, the problem addressed by this study was to determine the relationship between student engagement and academic success as measured by scores on the ACT Aspire Reading Assessment in one northwest Arkansas middle school.

For this study, student engagement was operationally defined by the level of attendance and disciplinary referrals by ninth-grade students in the participating junior

high school and served as the independent variables. Academic success was measured by scores on the ACT Aspire Reading Assessment and served as the dependent variable.

This quantitative study examined data from the school's student information system (SIS) and ACT Aspire testing portal. These databases provided student demographic data, ethnicity, and gender without identifying individual students by name. The data were collected from the most recent testing window during the 2021-2022 school year, with the goal of identifying possible relationships between student attendance, student discipline, and ACT Aspire reading scores by ethnicity and gender using the latest data available to the researcher.

Descriptive Results

The target population for this research study included all ninth-grade students in Arkansas public schools. The convenience sample included all ninth-grade students in one participating Northwest Arkansas junior high school who received a score on the ACT Aspire assessment during the 2021-22 school year.

The participating school housed two grade levels (eighth and ninth grades) with an enrollment of 740 (358 eighth graders and 382 ninth graders). The ethnic makeup of the school consisted of 483 (65.3%) Hispanic; 139 (18.8%) Pacific Islander; 72 (9.7%) White; 16 (2.2%) African American; 16 (2.2%) Asian; and 14 (1.9%) Other. In addition, 619 (83.6%) of the students in this school were listed as English Language Learners (ELL). By gender, the makeup of the school consisted of 372 (50.3%) males and 368 (49.7%) females.

There were 382 students enrolled at a Northwest Arkansas junior high school. Table 1 presents the enrollment numbers of ninth-grade students enrolled in the school

and the percentages of ethnic groups in comparison with the total school population. Of the three predominant groups, Hispanic, Pacific Islander, and White students are the largest, second largest, and third largest ethnic groups, respectively.

Table 3 presents the number of chronically absent students by ethnicity and gender. Hispanic students have the highest number of chronically absent students, at 21 males and 34 females. Pacific Islanders have the next highest number of chronically absent students, at eight males and 16 females. White students have the lowest number of chronically absent students, with three males and eight females. Including all ethnicities and genders, there are a total of 95 students categorically defined as chronically absent, with 33 of those being males and 62 of those being females.

Table 3

Number of Chronic Absentees by Ethnicity and Gender

Ethnicity	Male	Female	Total
Hispanic	21 (38.2%)	34 (61.8%)	55 (100%)
	(63.6%)	(54.8%)	(57.9%))
Pacific Islander	8 (33.3%)	16 (66.7%)	24 (100%)
	(24.2%)	(25.8%)	(25.3%)
White	3 (27.3%)	8 (72.7%)	11 (100%)
	(9.1%)	(12.9%)	(11.6%)
African American	0 (0.0%)	1 (100%)	1 (100%)
	(0.0%)	(1.6%)	(1.6%)
Asian	0 (0.0%)	2 (100%)	2 (100%)
	(0.0%)	(3.2%)	(3.2%)
Other	1 (50%)*	1 (50%	2 (100%)
	(1.6%)**	(1.6%)	(3.2%)
Total	33 (34.7%)	62 (65.3%)	95 (100%)
	(100%)	(100%)	

Note: *Percentages by Row; **Percentages by Columns.

Table 4

Number of Suspensions by Ethnicity and Gender

Ethnicity	Students Susp. 2021-22	Male	Female	Total	Total Ninth Grade Pop. By Ethnicity
Hispanic	0	100	115	215	251
	1	16	11	27	
	2	4	3	7	
	3	0	1	1	
Pacific Islander	0	27	34	61	70
	1	4	4	8	
	2	0	1	1	
	3	0	0	0	
White	0	16	18	34	38
	1	1	1	2	
	2	0	1	1	
	3	0	1	1	
African American	0	4	4	8	10
	1	0	1	1	
	2	1	0	1	
	3	0	0	0	
Asian	0	3	3	6	7
	1	1	0	1	
	2	0	0	0	
	3	0	0	0	
Other	0	2	2	4	6
	1	1	0	1	
	2	0	2	2	
	3	0			
Total					382

Note: *Percentages by Row; **Percentages by Columns.

Table 4 presents the number of out-of-school suspensions by ethnicity and gender. There were 35 Hispanic students with at least one suspension, nine Pacific Islander students with at least one suspension, and four White students with at least one suspension. Inclusive of all ethnicities and genders, there were 54 total students with at least one suspension.

Data Collection

The data collection will be archived data that is maintained in eSchool, which is the school's student information system (SIS). Student data can be pulled from eSchool and the school ACT Aspire portal with individual student names redacted, or the report can be designed in such a way as to only draw statistics without drawing student names. This data will be pulled by one of the current administrators. eSchool and the ACT Aspire portal both have the functionality to run reports and redact any particular student identifiers. For the purpose of this study, the administrator pulling the data report will redact student names. Gender, ethnicity, and scores will be visible in the data report. The data will be provided in an Excel file, which will be uploaded into SPSS software.

Data Analysis

Data analysis in this study was carried out in an attempt to answer the three research questions presented in Table 2. For the first two research questions, a correlational analysis was used to determine if there was a statistically significant relationship between two continuous variables. In RQ1, the variables were ninth-grade student attendance during the 2021-22 school year and the scores on the ACT Aspire Reading assessment in 2021-22. RQ2 was similarly analyzed, in this case, using the

ninth-grade student discipline data during the 2021-22 school year and the scores on the ACT Aspire Reading assessment in 2021-22.

The correlational analyses that answered RQ1 and RQ2 were then analyzed to determine if there was a statistically significant relationship between these continuous variables. Since it was determined that there was a statistically significant relationship between these variables, further analysis was carried out in an attempt to answer RQ3.

In order to answer RQ3, the researcher used a multiple linear regression analysis using the ACT Aspire Reading scores as the outcome variable and student attendance, student discipline, gender, and ethnicity as predictor variables in a multiple linear regression model. This analysis was carried out to determine what effect each of the predictor variables has on the student scores on this particular ACT Aspire Reading assessment. The procedures and results for each of the analyses are presented below.

Results

This section describes the procedures and results from the various statistical analyses that address the three research questions put forth in this study. The conclusions and implications for these results are presented in Chapter 5.

Research Question 1 (RQ1):

Is there a statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores?

$H_0 1$: There is no statistically significant relationship between student attendance and ninth-grade ACT Aspire Reading scores.

To answer RQ1, the research used a Pearson *r* correlation between the two continuous variables, ninth-grade student attendance in the 2021-22 school year and the

ninth-grade ACT Aspire Reading scores for the 2021-22 school year. The Pearson *r* correlation is the most widely used statistic to determine the strength of the relationship between two continuous variables. The statistic is reported based on a range from +1.00 to -1.00. The closer the score to +/- 1.00, the stronger the relationship. The plus or minus indicates the relationship's direction, not the statistic's value.

The correlational analysis had to meet three pretests in order to be used for this purpose. Those three pretests are normality, linearity, and homoscedasticity. Normality is satisfied if the two continuous variables are normally distributed. To determine this, a histogram was produced for each variable, and a determination was made that the data were normally distributed, satisfying the first pretest. The histograms are presented in Figure 1 and Figure 2.

Figure 1

Histogram Showing the Distribution of Attendance Data

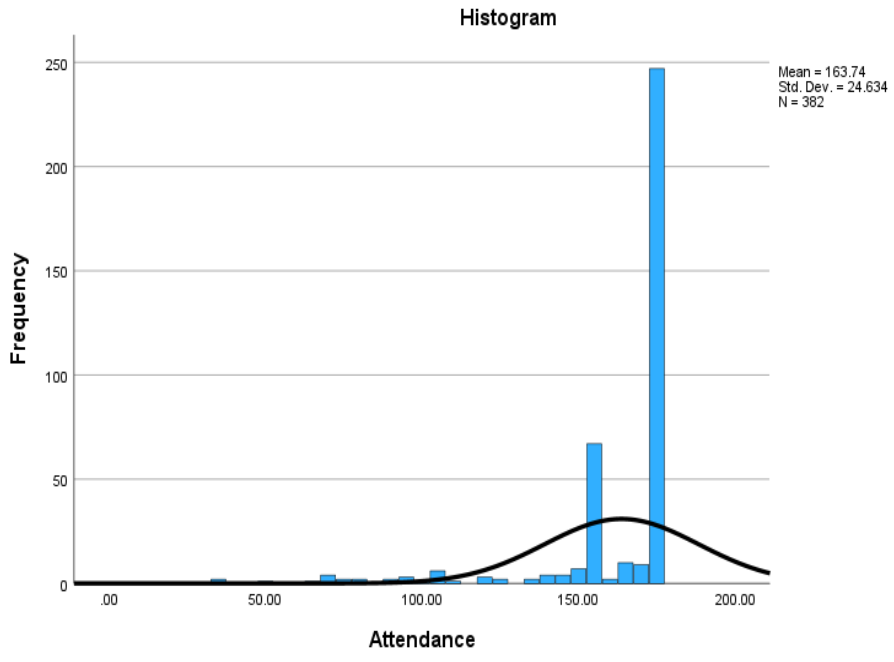
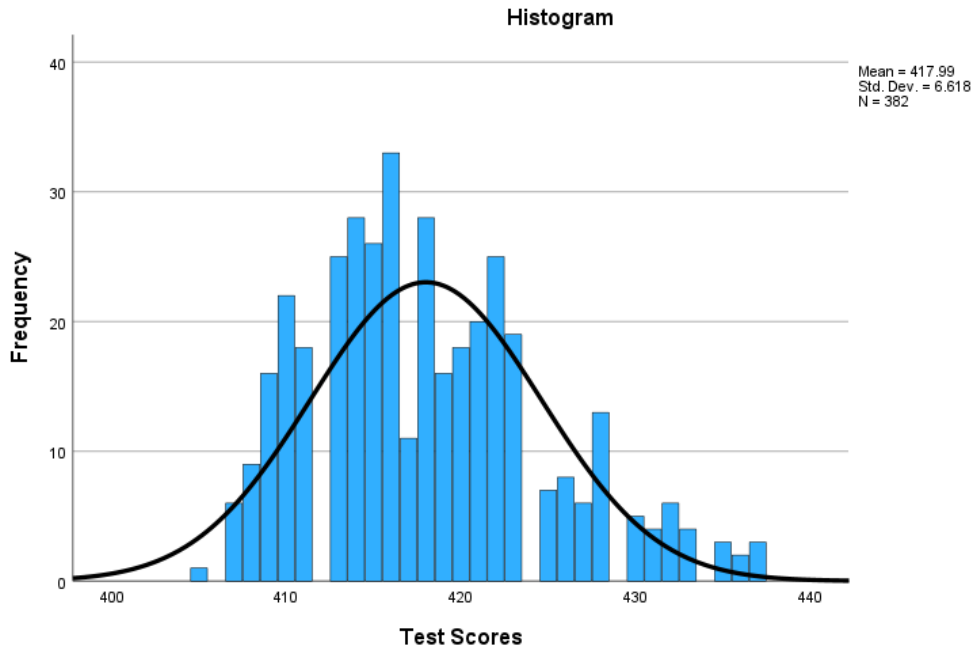


Figure 2

Histogram Showing the Distribution of ACT Aspire Reading Scores

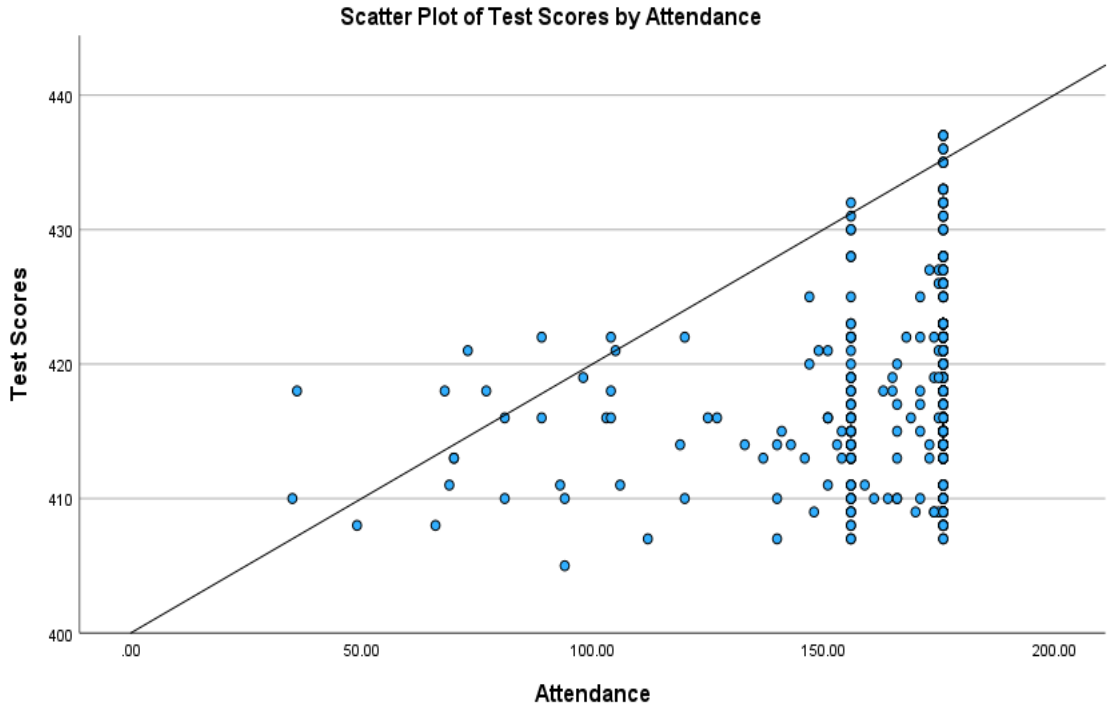


The second pretest is linearity. Linearity means that in a scatterplot, the data should form a relatively straight line, with the regression line taking a mid-path through the data points. If the overall shape of the data appears to form a shape other than a straight line, then the pretest for linearity is not met. The scatterplot for student attendance and ACT Aspire Reading scores is presented in Figure 3. While there do appear to be more data points below the regression line, the general direction of the data is in a linear direction, and it was determined that the second pretest was met.

The third pretest is homoscedasticity, which refers to the general shape of the scatterplot. In the scatterplot in Figure 3, it appeared that the data points were lumped toward one end of the graph. To satisfy homoscedasticity, the majority of the data points should be clustered in the middle, with fewer on each end. Based on the visual from this scatterplot, the third pretest was not met.

Figure 3

Scatterplot of Attendance and ACT Aspire Reading Scores



The violation of any of the three pretests for Pearson *r* correlation means that the statistic is unsuitable for this analysis. Instead, the researcher used a Spearman correlation instead. The Spearman correlation or Spearman *rho* is a non-parametric statistic that is similar to Pearson *r* and provides similar results. With Spearman correlation, it is not necessary for the data to be normally distributed. The results of the Spearman correlation are presented in Table 5.

Spearman correlation was computed to assess the relationship between student attendance and ACT Aspire Reading scores for the 382 ninth-grade students in the participating middle school. There was a statistically significant positive correlation between these two variables, $r = .266$($p = <.001$, $\alpha = .05$). Therefore, the null hypothesis that stated there is no relationship between the two variables is not supported.

Table 5

Correlation Results for Attendance and ACT Aspire Reading Scores

			Test Scores	Attendance
Spearman's rho	Test Scores	Correlation Coefficient	1.000	.266**
		Sig. (2-tailed)	.	<.001
		N	382	382
	Attendance	Correlation Coefficient	.266**	1.000
		Sig. (2-tailed)	<.001	.
		N	382	382

**. Correlation is significant at the 0.01 level (2-tailed).

Research Question 2: (RQ2)

Is there a statistically significant relationship between student discipline and ninth-grade ACT Aspire Reading scores?

Figure 4

Scatterplot of Suspensions and ACT Aspire Reading Scores

A similar process was used in analyzing the data to answer RQ2. Although the pretests for normality and linearity were met (See Figure 4), the data failed the pretest for homoscedasticity, and the researcher was not able to use Pearson *r* correlation.

Spearman correlation was used to determine if there was a statistically significant relationship between student discipline and ACT Aspire Reading scores for the ninth-grade students in the participating middle school. As presented in Table 6 below, there was a statistically significant relationship between the two variables, $r = -.114$($p = .026$, $\alpha = .05$). The results indicate that if the number of suspensions goes up, the reading scores go down, and vice versa. Therefore, the null hypothesis that there is no statistically significant relationship between student discipline and ACT Aspire Reading scores is not supported.

Table 6

Correlation Results for Suspensions and ACT Aspire Reading Scores

			Test Scores	Suspensions
Spearman's rho	Test Scores	Correlation Coefficient	1.000	-.114*
		Sig. (2-tailed)	.	.026
		N	382	382
	Suspensions	Correlation Coefficient	-.114*	1.000
		Sig. (2-tailed)	.026	.
		N	382	382

*. Correlation is significant at the 0.05 level (2-tailed).

Research Question 3 (RQ3)

The results confirmed in answering RQ1 and RQ2 demonstrated that there was a correlation between student attendance and ACT Aspire Reading scores and between student discipline and ACT Aspire Reading scores. However, correlation only shows

relationship and not cause and effect. Therefore, RQ3 was established to go deeper into the relationship demonstrated between these variables and attempts to establish whether the two continuous variables, along with two additional categorical variables, have an effect on predicting these ninth-grade student ACT Aspire Reading scores.

A multiple linear regression was used to answer RQ3. Do student attendance, student discipline, gender, and ethnicity predict ninth-grade ACT Aspire Reading scores?

Multiple regression analysis is similar to correlational analysis but allows for a more complex examination of multiple predictors or independent variables in determining the relationship to the outcome variable or dependent variable. In this study, the multiple linear regression analysis sought to determine the relationship between four predictor variables (student attendance, student discipline, gender, and ethnicity) and one outcome variable (ACT Aspire Reading scores). This regression model was complicated by the fact that two of the predictor variables were continuous (attendance and discipline), and two were categorical (gender and ethnicity). Multiple linear regression allows the use of both continuous and categorical variables as long as variables with three or more categories use dummy variables in the analysis. Gender had two categories, so it was not necessary to use dummy variables for gender. However, ethnicity had seven categories, and dummy variables were established before running the regression.

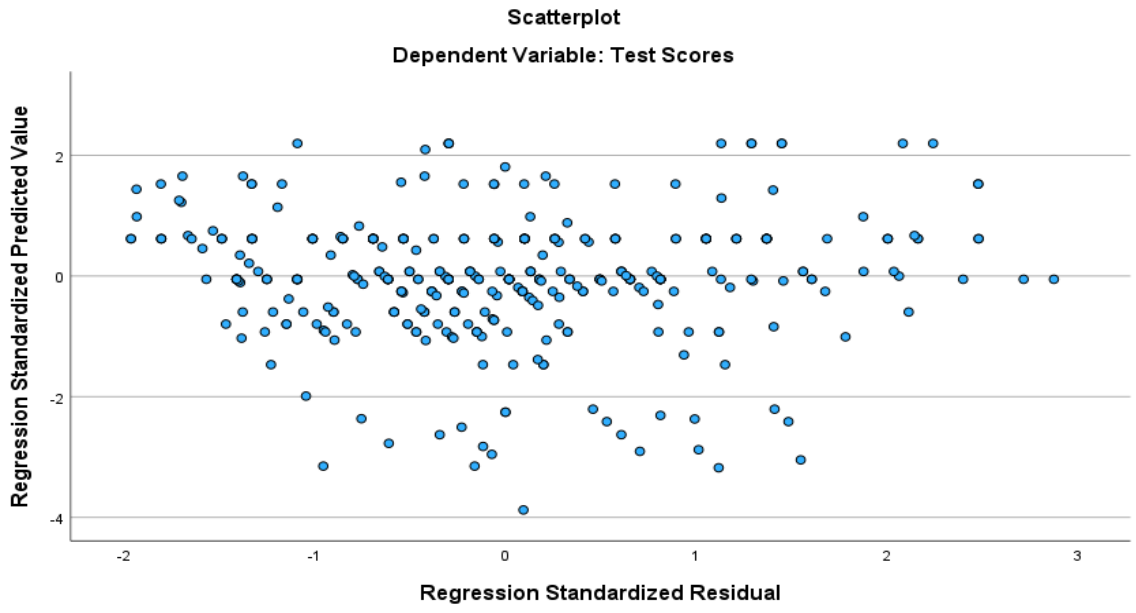
Similar to correlation analysis, there are a series of pretests that must be met before multiple regression can be used. There are five pretests: *n* quota, linearity, homoscedasticity, multicollinearity, and normality. The following description depicts the process for establishing that the data met all five pretests.

The first pretest is *n* quota. There has to be a predetermined minimum n size before multiple linear regression can used. There is a formula established to determine the size needed for a particular analysis. Counting the number of continuous predictor variables (two) plus the number of categories within each categorical variable minus one in each (seven) for a total of nine. Multiple that number by 10 equals 90. Based on this formula, the dataset for this study should have a minimum of 90 cases. The *n* in the study dataset equals 382. Therefore, the *n* quota pretest is met.

The second pretest is linearity among the continuous variables. This pretest was determined previously in the pretests for Spearman correlations. In Figure 3 and Figure 4, the scatterplots for student attendance and student discipline were determined to be linear, thereby meeting this second pretest.

Figure 5

Scatterplot of z Prediction and z Residual Scores for ACT Aspire Reading Scores



The third pretest is the homoscedasticity of the dependent variable, ACT Aspire Reading scores. A scatterplot was run using the *z* residual scores compared to the *z* predictor scores to determine their distribution. If most of the data points fall within +/-2 standard deviations, then it is determined that the outcome variable meets the pretest for homoscedasticity. When viewing Figure 5, it is apparent that the ACT Aspire Reading scores fall within that range, and the third pretest is met.

The fourth pretest is multicollinearity. If two continuous variables are highly correlated and included in a regression model, it would have the effect of double-loading the process. Therefore, a pretest to make sure that none of the continuous variables are highly correlated is run. This pretest can be determined by reviewing the last column in Table 7. The variance inflation factor (VIF) should be below or equal to five for each variable. In this case, each variable has a VIF of less than two, which means that the pretest for multicollinearity has been met. None of the variables are highly correlated with each other.

The fifth and final test is normality. If the distribution of the unstandardized residuals found from the outcome variable is normally distributed, this pretest would be met. By reviewing Figure 6, the distribution of the unstandardized residuals for ACT Aspire Reading scores appears to be normally distributed, and the fifth pretest is met.

Table 7

Coefficients for Regression Models

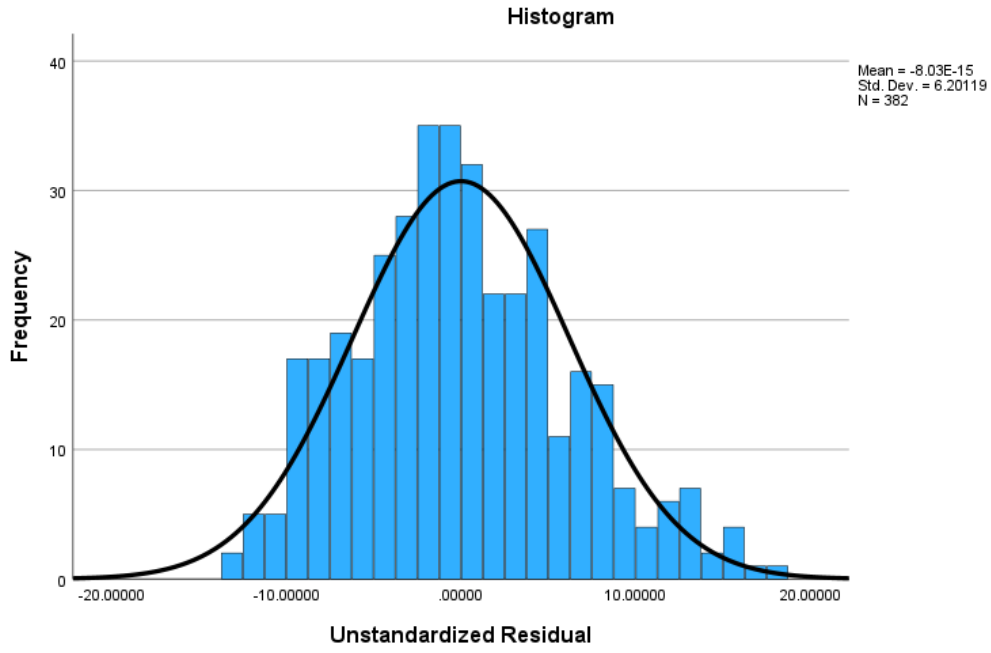
Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	407.97	2.22		183.63	<.001		
	Attendance	.06	.01	.23	4.56	<.001	1.00	1.00
2	(Constant)	405.43	2.485		163.17	<.001		
	Attendance	.06	.013	.24	4.71	<.001	.996	1.00
	Gender	1.47	.659	.11	2.23	.03	.996	1.00
3	(Constant)	405.80	2.48		163.34	<.001		
	Attendance	.06	.01	.22	4.54	<.001	.981	1.02
	Gender	1.50	.65	.11	2.30	.02	.992	1.01
	ethnicity= White	3.50	1.10	.16	3.19	.00	.963	1.04
	ethnicity= African American	.12	2.04	.00	.06	.96	.983	1.02
	ethnicity= Asian	1.50	2.42	.03	.62	.54	.990	1.01
	ethnicity= Pacific Islander	-1.93	.86	-.11	-2.26	.03	.946	1.06
	ethnicity= American Indian	2.64	6.32	.02	.42	.68	.996	1.00
	ethnicity= Multi-Race	3.28	2.85	.06	1.15	.25	.993	1.01

a. Dependent Variable: Test Scores

Since all five pretests were met, it was determined that multiple linear regression was appropriate to answer RQ3. The data were entered into SPSS29 by using the regression function. The ACT Aspire Reading scores were entered as the outcome variable, with student attendance, student discipline, and gender entered as the predictor variables in Block 1. Dummy variables were created for ethnicity since it was a categorical variable with three or more categories. The dummy variables for ethnicity were all entered as the predictor variable in Block 2. At this point, the multiple linear regression was run with the results reported below.

Figure 6

Histogram for the Distribution of Unstandardized Residuals for ACT Aspire Reading Scores



A multiple linear regression was run to answer RQ3, which sought to determine what variables predict the ninth-grade scores on the ACT Aspire Reading assessment in the participating middle school. The predictor variables entered were student attendance, student discipline, gender, and dummy variables for ethnicity. The model results are presented in Table 8 and Table 9. During the analysis, student discipline was removed from the analysis as a non-factor, so three models were established.

Table 8

ANOVA Results for Regression Models

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	867.01	1	867.01	20.83	<.001[b]
	Residual	15818.00	380	41.63		
	Total	16685.00	381			
2	Regression	1072.52	2	536.26	13.02	<.001[c]
	Residual	15612.54	379	41.19		
	Total	16685.00	381			
3	Regression	1872.68	8	234.09	5.90	<.001[d]
	Residual	14812.30	373	39.71		
	Total	16685.00	381			

a. Dependent Variable: Test Scores
b. Predictors: (Constant), Attendance
c. Predictors: (Constant), Attendance, Gender
d. Predictors: (Constant), Attendance, Gender, ethnicity=White, ethnicity=Multi-Race, ethnicity=Asian, ethnicity=American Indian, ethnicity=African American, ethnicity=Pacific Islander

Model 1 uses student attendance regressed onto ACT Aspire Reading scores. The results for Model 1 indicate that student attendance significantly predicts these reading scores, $R^2 = .052$, $R^2_{Adj} = .049$, $F(1, 380) = 20.828$, $p < .001$. This model accounts for 5.2% of the variance in the ACT Aspire Reading scores for this student sample.

Model 2 uses student attendance and gender regressed onto ACT Aspire Reading scores. The results for Model 2 indicate that student attendance and gender significantly predict these reading scores, $R^2 = .064$, $R^2_{Adj} = .059$, $F(2, 379) = 13.018$, $p < .001$. This model accounts for 6.4% of the variance in the ACT Aspire Reading scores for this student sample.

Table 9

Model Summary

Model	R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df1	df2	Sig. F Change
1	.228[a]	.052	.049	6.452	.052	20.828	1	380	<.001
2	.254[b]	.064	.059	6.418	.012	4.989	1	379	.026
3	.335[c]	.112	.093	6.302	.048	3.358	6	373	.003

a. Predictors: (Constant), Attendance
b. Predictors: (Constant), Attendance, Gender
c. Predictors: (Constant), Attendance, Gender, Dummy Ethnicity
d. Dependent Variable: Test Scores

Model 3 uses student attendance, gender, and ethnicity regressed onto ACT Aspire Reading scores. The results for Model 3 indicate that student attendance, gender, and ethnicity significantly predict these reading scores, $R^2 = .112$, $R^2_{Adj} = .093$, $F(8, 373) = 5.895$, $p < .001$. This model accounts for 11.2% of the variance in the ACT Aspire Reading scores for this student sample.

Based upon the results of the multiple linear regression, the answer to RQ3 is that while student attendance, gender, and ethnicity all significantly predict the ACT Aspire Reading scores for the ninth-grade students in the participating middle school, student discipline did not. Therefore, the null hypothesis is partially unsupported. Three of the four predictor variables used in the study did statistically predict the outcome variable.

Chapter Summary

This chapter describes the findings of the quantitative study in detail. The researcher was responsible for reviewing the research questions and communicating the information gathered from the outcome of the data analysis. The study results were gained by the application of 2 statistical analyses, Spearman Rho correlation, and multiple regression.

The descriptive statistics from RQ1 and RQ2 showed a significant positive correlation between student attendance and reading scores. The descriptive statistics from RQ2 showed there was not a significant positive correlation between student discipline alone and reading test scores.

Multiple linear regression was used to test the hypothesis in the remaining research question. The focus would be to determine if there was a significant correlation between attendance, student discipline, gender, and ethnicity, to reading scores. Attendance, gender, and ethnicity predicted reading scores, but student discipline alone did not predict reading scores.

CHAPTER V:

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The problem addressed in this study was whether attendance, including disciplinary consequences that affect attendance, affects reading proficiency when considered by gender and ethnicity. Considering attendance data, discipline data, and ACT Aspire reading scores, the study aimed to show the correlation between student engagement and reading proficiency in junior high school students across genders and ethnicities. This was important because reading comprehension is indicative of overall academic achievement. With that, if students are struggling to read on grade level, it is essential for schools to find solutions to the causes of low reading proficiency. Therefore, if disciplinary consequences like out-of-school suspension contribute to chronic absenteeism, administrators can focus on effective disciplinary alternatives to out-of-school suspension.

This chapter presents the results of the data analysis in relation to the research questions and hypotheses presented in Chapter 4. Along with these results, this chapter seeks to provide conclusions and implications for educational practice and recommendations for future research.

Summary of Results

The research questions and hypotheses for this study are:

- RQ1: Is there a relationship between attendance and ninth-grade ACT Aspire Reading scores?
    - H1: There is no relationship between attendance and ninth-grade ACT Aspire Reading scores.

- RQ2: Is there a relationship between discipline and ninth-grade ACT Aspire Reading scores?
    - H2: There is no relationship between discipline and ninth-grade ACT Aspire Reading scores.
- RQ3: Do student attendance, student discipline, gender, and ethnicity predict ninth-grade ACT Aspire Reading scores?
    - H3: Student attendance, student discipline, gender, and ethnicity do not predict ninth-grade ACT Aspire Reading scores.

RQ1 was answered using Spearman correlation to determine if there was a statistically significant relationship between student attendance and ACT Aspire Reading scores for the 382 ninth-grade students in the participating middle school. The result was a statistically significant positive correlation between these two variables, $r = .266$($p = <.001$, $\alpha = .05$). Therefore, the null hypothesis that there is no relationship between the two variables was rejected. In other words, there was a statistically significant relationship between student attendance and scores on the ACT Aspire Reading Assessment.

RQ2 was answered using Spearman correlation to determine if there was a statistically significant relationship between student discipline and ACT Aspire Reading scores for the ninth-grade students in the participating middle school. The result showed that there was a statistically significant correlation between student discipline and ACT Aspire Reading scores, $r = -.114$($p = .026$, $\alpha = .05$). Therefore, the null hypothesis that there is no statistically significant relationship between student discipline and ACT Aspire Reading scores was rejected. In other words, to answer RQ2, there was a

statistically significant relationship between student discipline and ACT Aspire Reading scores for the ninth-grade students in the participating Northwest Arkansas junior high school.

RQ3 was answered using multiple linear regression with student attendance, discipline, gender, and ethnicity as predictor variables for the outcome variable ACT Aspire Reading scores for ninth-grade students in one Northwest Arkansas junior high school. The results of the regression analysis were:

Model 1 used student attendance regressed onto ACT Aspire Reading scores. The results for Model 1 indicate that student attendance significantly predicts these reading scores, $R^2 = .052$, $R^2_{Adj} = .049$, $F(1, 380) = 20.828$, $p < .001$. This model accounts for 5.2% of the variance in this student sample's ACT Aspire Reading scores.

Model 2 used student attendance and gender regressed onto ACT Aspire Reading scores. The results for Model 2 indicate that student attendance and gender significantly predict these reading scores, $R^2 = .064$, $R^2_{Adj} = .059$, $F(2, 379) = 13.018$, $p < .001$. This model accounts for 6.4% of the variance in this student sample's ACT Aspire Reading scores.

Model 3 used student attendance, gender, and ethnicity regressed onto ACT Aspire Reading scores. The results for Model 3 indicate that student attendance, gender, and ethnicity significantly predict these reading scores, $R^2 = .112$, $R^2_{Adj} = .093$, $F(8, 373) = 5.895$, $p < .001$. This model accounts for 11.2% of the variance in this student sample's ACT Aspire Reading scores.

Based upon the results of the multiple regression, the answer to RQ3 was that while student attendance, gender, and ethnicity all significantly predict the ACT Aspire

Reading scores for the ninth-grade students in the participating middle school, student discipline did not. Therefore, the null hypothesis is partially rejected. Three of the four predictor variables used in the study did statistically predict the outcome variable.

Implications for Educational Practice

The results of this study show that academic achievement decreases as attendance decreases. Being present at school is necessary for all students to experience academic achievement. Out-of-school suspension is commonly given to students who have committed a serious disciplinary offense. The out-of-school suspension removes the student from the classroom, causing the student to miss instruction. The out-of-school suspension is meant to deter negative behavior. However, some students, especially minorities, who are assigned an out-of-school suspension become repeat offenders. This shows that the out-of-school suspension is not a deterrent to negative behavior, nor does it address the root causes of the behavior.

In the researcher's experience, the out-of-school suspension enables or encourages negative behavior because students who struggle with behavioral issues view the out-of-school suspension as a vacation. It is an opportunity for them to leave school without guidance or accountability. The parents or guardians are usually working, and any siblings are away at school. The student has the luxury of doing whatever they want with no accountability, which is generally counterproductive to their education. Upon return to school, the student who has served an out-of-school suspension is behind in every class and not in good standing with extracurricular activity sponsors. Additionally, there is usually no re-entry plan to get the student caught up or address the causes of the

behavior that landed the student with the out-of-school suspension in the first place. The lost instructional time leads to lower academic achievement.

The relationship between lost instructional time due to suspension and academic achievement has been discussed in the education community for some time. Allensworth and Evans (2016) state that absenteeism is a direct cause of poor academic achievement in school, and every instructional day counts. Basford (2021) points out that chronic absenteeism is an indicator of the school-to-prison pipeline, making absenteeism an issue that will affect the rest of the student's life. Absenteeism is a negative indicator of students' academic achievement and overall success after school.

The results of the present study support the research in this area. In addition to low attendance being correlated with ACT Aspire Reading scores for the ninth-grade in this Northwest Arkansas junior high school, the results also indicate that gender and ethnicity combined with low attendance may predict these scores. Since the demographics for the students in this study skewed toward non-English speaking students more than the general population of Arkansas, ethnicity may also correlate to reading scores.

Recommendations for Educational Practice

1) Since attendance significantly affects reading scores, school leaders need to find methods to increase attendance.

2) Since discipline and attendance are colinear, that is, the more discipline referrals and suspensions, the lower the attendance rates of students, school leaders should review school discipline policies and determine if discipline referrals are being

equitably distributed across gender and ethnicity and if not, develop policies that will make it more equitable.

3) School leaders need to analyze whether at-risk students are chronically absent and involved in disciplinary actions more than other students. Programs and policies should be undertaken to help support these students to increase attendance. For instance, rather than adding to lost instructional time, students exhibiting chronic tardiness and absenteeism could benefit from support in the form of wraparound services (Kezar et al., 2020).

Wraparound services are any resources or support outside the curriculum that schools can provide (Kezar et al., 2020). Schools may be able to provide wraparound services to remedy underlying student issues such as tardiness or absenteeism (Kezar et al., 2020). For example, a student struggling with social issues at school may be late or avoid school altogether. This shows up as tardiness and absenteeism. Rather than only issuing consequences, such as detention or suspension, this student might benefit from working with a school counselor or social worker. Social services provided by a school counselor or social worker may rectify student social issues, thereby improving student attendance and eliminating lost instructional time (Kezar et al., 2020).

The out-of-school suspension as a consequence of disciplinary infractions is an area of concern for individuals aware of the short and long-term effects of out-of-school suspensions on students and missed instructional days in general (Bowers & Schwarz, 2018). Dickinson (2021) states that students are better positioned to experience academic success if they are present at school. One strategy administrators can use to achieve higher student attendance is to emphasize extracurricular activity participation.

Recommendations for Future Research

This quantitative, correlational study was very narrowly focused regarding sampling and analysis. It examined only one grade level in one junior high school in one geographic region of Arkansas. Many streams of research can be expanded from this one study. Some of the recommendations for future research are provided below.

1) There are over 200 variables that affect a student's ability to succeed academically. In the present study, a limited number of variables were examined. A more detailed and expanded number of variables included in the statistical analysis would provide more rigorous results.

2) Extracurricular activity participation may strongly correlate to high student attendance. A study examining the effects of extracurricular activities on attendance and academic success would help establish methods to increase attendance.

3) Another direction would be to examine schools that use alternatives to out-of-school suspensions in response to disciplinary infractions and to research programs to address underlying behavior issues. The data may show that this strategy by school administrators may be an effective tool to combat chronic absenteeism.

4) Another recommendation is to examine the impact of social and emotional health support on students with chronic behavior problems that typically result in out-of-school suspension. Students may suffer from some underlying individual issues that result in absenteeism. There are many ways to further this study in the future.

5) The present study could be replicated in other districts with a more in-depth look at alternate responses to behavior infractions other than out-of-school suspension.

6) Studies using other methods and designs, such as qualitative or mixed methods designs, may reveal a deeper understanding of the issues by investigating the perceptions of teachers and principals to these issues, as well as students who are engaged in disciplinary actions and low attendance.

Study Summary

I had a few expectations coming into this research. Chronic absenteeism was an issue that needed to be resolved to facilitate school improvement. In reviewing suspension data, the out-of-school suspension as a response to negative behavior is one factor of school improvement that school leadership can fix immediately simply by practicing other responses to negative student behavior. Coming into this research, I believe school suspension dramatically affects overall school performance more than many school leaders realize. The out-of-school suspension is not viewed as a punishment by the student but as a reward. It does not address, much less solve, the underlying reason for the negative behavior. It is a direct cause of lost instructional time, leading to more negative behavior. It also affects school ratings because the school information system counts out-of-school suspensions as absent. Coming into this research, I believed that the out-of-school suspension would have the same effect regardless of gender or ethnicity. The most significant learning experience through this research was studying the data and implementing changes in my school while completing this research. I found that responses to negative student behavior other than out-of-school suspension have proven to be much more effective as a school leader. Rather than out-of-school suspension as a response to negative student behavior, we have support sessions with the student involving our school counselor, behavior specialist, a loved one, which may not always

be a parent, an administrator, a teacher, and sometimes other individuals, to identify the reason for the negative behavior and identify what we can do as a team to help remedy the underlying cause of the negative behavior. This has had a tremendous impact on our attendance. Last school year, we were at about twenty-three percent chronic absenteeism.

This school year, we are at zero percent chronic absenteeism. Only some students in the school are anywhere near on pace to be in the chronic absenteeism category. If there is one thing that I could have done better, it would be to extend the research to study alternatives to out-of-school suspension and the success rates of specific data points at other schools according to those alternatives. However, I do believe I accomplished my goal with this research: to study the effects of attendance on academic achievement.

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Appendices

Appendix A: ATU IRB Approval Letter

ARKANSAS TECH UNIVERSITY

OFFICE OF RESEARCH AND SPONSORED PROGRAMS

1509 North Boulder Avenue
Administration, Room 207
Russellville, AR 72801

479-880-4327
www.atu.edu

July 20, 2023

To Whom It May Concern:

The Arkansas Tech University Institutional Review Board has deemed the application for D.J. Vincent's proposed research, entitled "The Relationship between Student Engagement and ACT Aspire Reading Scores among Eighth and Ninth Grade Students in one Northwest Arkansas Junior High School," to be exempt pursuant to federal regulation 45 CFR 46.104 (d)(2)(i). Please use number E-2022-40 when referencing this study.

Please note that in the event that any of the parameters of the study change, the researcher may be required to submit an amended application.

Please proceed with your research. We wish you success with this endeavor.

Sincerely,

Bryan D. Rank

Bryan D. Rank, Ph.D.
Institutional Review Board Chair
Arkansas Tech University

Appendix B: District Approval to Conduct Study

---------- Forwarded message ---------
From: **MARCIA SMITH** <msmith1@[redacted].org>
Date: Wed, Jun 28, 2023, 9:38 AM
Subject: Re: Reserach
To: DR. JEFF FLANIGAN <jflanigan@[redacted].org>, Shannon Tisher <stisher@[redacted].org>, Kelli Langan <klangan@[redacted].org>

Dr. Flanigan,

This is a little unusual. The documents were not sent to Dr. Langan so we had to proceed differently.
The Research Committee read over everything last night and approved the research. Please use this email as approval.

Dr. Langan is reaching out to Albert to see about pulling the needed research data.

All our best,
MS