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A Study to Determine the Relationship Between
Classroom Teacher Attendance and
Student Success

by

Meagan Stanley

August 20, 2020

A Dissertation submitted to the Education Faculty of Lindenwood University in

partial fulfillment of the requirements for the degree of

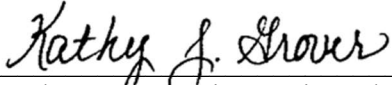
Doctor of Education

School of Education

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Doctor of Education
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Dr. Kathy Grover, Dissertation Chair

8/20/2020

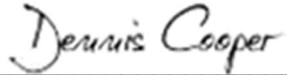
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Dr. Amy St. John, Committee Member

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Date



Dr. Dennis Cooper, Committee Member

8/20/2020

Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work at Lindenwood University and that I have not submitted it for any other college or university course or degree.

Full Legal Name: Meagan Stanley

Signature: Meagan Stanley Date: 8-20-2020

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Abstract

Students that consistently have access to high-quality teachers and teaching strategies experience higher degrees of success (Frieberg, 2013). In the absence of high-quality, professional classroom teacher, students may not succeed at the rate they would otherwise. The purpose of this study was to determine the relationship between classroom teacher attendance and student success. Student success factors (attendance, behavior, and achievement) were examined in connection with classroom teacher attendance. The study included students in grades Kindergarten through Fifth grade who attended Kindergarten through Fifth grade buildings in a Midwestern school district. The literature reviewed for this study reiterated the importance of the classroom teacher. Data collected and analyzed revealed no strong correlation between classroom teacher attendance and student success.

Correlation provides insight into the behavior of a pair of variables (i.e. classroom teacher attendance and student success). The statistical test is not an adequate method to assess a predictive model. Regression analysis led to the discovery of a statistically significant dependent relationship between classroom teacher attendance and student success. Therefore, a strong predictive model for student success based on classroom teacher attendance resulted from the study.

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Chapter One: Introduction

Greek philosopher Aristotle once stated, “those who educate children well are more to be honored than they who produce them; for these only gave them life, those the art of living well” (as cited in McGasko, 2019, para.1). This statement signifies the importance of teachers in students’ lives (Stronge, 2018). Teachers play a critical role in student success (Strong, 2018).

The role of the teacher has evolved throughout educational history in America (Sloan, 2012). During the 20th century, teachers prepared students for an industrial workforce (Wagner 2015). Adequate preparation was accomplished by providing impersonal, efficient, and standardized training students for a career in industry (Schrager, 2018).

Modern-day classroom teachers, however, play a very different role in the classroom (De La Rosa, 2019). Now, teachers are tasked with preparing students to live in a globalized environment characterized by fast-pace and ever-changing technologies (Zhao, 2015). To thrive in highly collaborative, global business world, students have to be critical-thinkers and problem solvers (Care et al., 2017). The shift from industry preparation to global business preparation requires a paradigm shift in educational processes (Schieber, 2018). Classroom teachers are responsible for instilling cognitive processes in students that allow them to deeply understand and apply learned concepts to real-life situations (Zhao, 2015).

Hattie (2012) stated, “The act of teaching requires deliberate interventions to ensure that there is cognitive change in the student” (p. 19). According to existing research, teachers have an impact on student success (Stronge, 2018). The purpose of

this study is to reiterate the importance of teacher influence on students in terms of behavior, attendance, and achievement, and to examine the aforementioned factors in relation to teacher attendance. While there is an existing repository of research on the relationship between teacher absenteeism and student achievement, the results of that research are conflicting (Porres, 2016). An analysis of classroom teacher attendance and student behavior, student attendance, and student learning may unveil a relationship between classroom teacher attendance and student success.

Background of the Study

The role of the classroom teacher is long-standing and has been critical throughout the history of America's educational system (Koc & Celik, 2016). Though requirements of the position have evolved, the classroom teacher remains the centerpiece of the contemporary classroom (Roberts & Kim, 2019). The modern-day classroom teacher, as well as the associated responsibilities, is described in the pages that follow.

Conventional teachers were tasked with preparing students for an industrial society (DuFour & DuFour, 2015). In fact, "throughout the 1960s, the United States was the leading industrial nation in the world" (DuFour & DuFour, 2015, p. 22). Thus, the impact of the teacher could be measured by the ability to deliver information to be subsequently memorized by students in preparation for the workforce that awaited them outside of the classroom (Zhao, 2015). The "employee-oriented paradigm of education" dominated teaching philosophy for decades (Zhao, 2015, p. 84).

Modern teachers are expected to take on more of a leadership role in the classroom (Lynch, 2016). The post-secondary working and learning environment has become increasingly more connected (Zhao, 2015). As such, students' development of

21st-century competencies has become a point of focus for contemporary educators (Zhao, 2015). Twenty-first century competencies have been linked to “related desired outcomes for students” (Pellegrino, 2014, p. xvii). According to Pellegrino (2014), students who master skills in the cognitive, intrapersonal, and interpersonal arenas will be better able to successfully “meet future challenges” and “achieve their full potential” (p. xvii).

The responsibility of developing 21st-century skills has fallen on the shoulders of educators (Zhao, 2015). The aforementioned employee-oriented paradigm has shifted toward a student-centered paradigm whereby educators “guide, support and celebrate individual students” (Zhao, 2015, p. 98). This paradigm shift has inspired a new era of teaching, one in which the “teacher is a constructor, facilitator, coach, and creator of learning environments” (Amin, 2016, p. 41).

Desirable learning environments promote “both academic and social-emotional learning” (Poole & Evertson, 2013, p. 188). According to Freiberg (2013), “ecological studies...treated classrooms as ecological systems where settings and activities [could] be altered to create a more conducive environment for learning” (p. 228). These ecological studies evolved into person-centered classroom studies, whereby the interactions between educators and students were examined (Freiberg, 2013). It was observed that person-centered classrooms promote “higher achievement and positive learning environments” through the development of interpersonal relationships (Freiberg, 2013, p. 228).

Person-centered environments promote learning (Zucconi, 2015). In addition, desirable learning environments built on the foundation of positive student-teacher relationships also promote the reduction of student misbehavior and student absences

(Kaput, 2018). Because educators are responsible for creating such an environment, it can be said that educators play a role in student success (Farmer, Kinsey, & Wiltsher, 2018). According to Davis (2013), “children who have...experienced positive relationships with teachers tend to...experience benefits to learning and motivation” (p. 221).

Given the critical role of the educator in creating an environment conducive to student success, it stands to reason that students who consistently experience high-quality teachers or teaching strategies would achieve higher degrees of success in the areas of behavior, attendance, and, therefore, learning (Freiberg, 2013). In the absence of the classroom teacher, however, students may not experience the same successful outcomes (Combs, 2017). Analyses of teacher absence rate indicate that educators are absent 16-20% of the time (Combs, 2017, para.1). The 2017 Annual Report on Employee Absence and Substitute Data showed “22% of teacher absences are actually a result of professional obligations outside of the classroom” (Combs, 2017, para. 2). Educators are, in effect, missing several days of instructional time, thus exposing students to inexperienced teachers which could negatively impact the cultivation of a desirable learning environment and, therefore, student success (Hattie, 2012).

Theoretical Framework

The social cognitive learning theory was chosen to serve as the framework for this study. In 1977, Bandura introduced a theoretical framework that explains learning by emphasizing the interaction of behavior, environmental events, and cognitive, personal factors in the learning process (Bandura, 1989). According to Harinie, Sudiro, Rahayu, & Fatchan (2017), “recognizing...reciprocal relationships that occur between the

behavior, the individual (cognitive) and the environmental” factors influence understanding of how individuals learn (para. 10). Behavioral agents have the ability to influence cognitive agents, conversely, cognitive agents can affect behavioral agents (Harinie et al., 2017). In addition, an individual’s, or group’s environment can influence learning processes (Harinie et al., 2017). The interaction between environmental, individual, and behavioral factors and the ability of the classroom teacher to be observed serves as the basis for this study.

Bandura defined the interactive relationship between environmental, individual, and behavioral factors as reciprocal determinism (American Psychological Association, 2020). Reciprocal determinism is a model that suggests the aforementioned factors influence the way students act and learn (Cummins, 2020) Individual elements involve personality traits, cognitive function, perception, and self-efficacy (McCormick, 2015). Environmental elements tend to involve “physical surroundings and stimuli” that affect individuals’ personal traits and behavioral patterns (Cummins, 2020, para.8). Behavioral factors include how individuals act and react to different stimuli (Cummins, 2020).

In the social cognitive learning theory, Bandura (1989) highlighted observational learning. Observational learning takes place through the process of observation and consideration of behavior models (Harinie et al., 2017). Cocroft (2015) posited, “Students acquire new knowledge and behaviors” through observation (p. 7).

An experiment performed by Bandura in the 1960’s yielded results that led researchers to believe that learning occurs through social modeling (i.e. observation). The study was titled the Bobo doll experiment (Nolen, 2020). In the study, inflatable toys were mistreated by adults (Nolen, 2020). While adults were physically and verbally

abusing the toys, children were observing their behavior; subsequently, the children began to mimic the adults' abusive behavior resulting in the discovery that learning occurs through observation (Nolen, 2020).

According to Harinie, et al. (2017), student learning occurs through the observation of environmental and behavioral influences. Student success is realized when students begin to mimic the observed model behaviors (Harinie et.al, 2017). Learning has occurred when students display the learned behavior consistently, and continues to occur through the interaction of behavior, cognition, and the environment (Harinie et.al, 2017).

Bandura (1989) proclaimed the importance of environmental factors (the classroom) and observational learning in the social cognitive learning theory as well. Educators are responsible for creating person-centered, positive learning environments through the development of interpersonal relationships (Freiberg, 2013). Previous studies have shown that person-centered learning environments promote higher degrees of "creativity/critical thinking and math/verbal achievement" (Freiberg, 2013, pp. 228-229). Additionally, as suggested in the social cognitive theory, students "acquire new knowledge and behaviors" through observation (Cocroft, 2015, p. 7). To be observed by students, classroom teachers must be consistently present (Miller, 2017).

Statement of the Problem

Teachers play a critical role in the development and success of students (Stronge, 2018). The teacher, and factors associated with the teacher, have been identified as having the largest effect size on student achievement (1.62) (Killian, 2017, para. 2). Effect size, according to Hattie (2012), is indicative of the level of impact educators have

on their students' achievement. Higher values indicate higher degrees of impact, with 0.40 representing one year of academic progress (Hattie, 2012, p. 272).

Classroom teachers are able to create optimal learning environments whereby students feel safe, supported, and empowered (Zucconi, 2015). Ideal learning environments are built on a foundation of strong, positive teacher-student relationships (Hwang, 2017). Students succeed at a higher rate in regard to achievement, behavior and attendance when immersed in an environment conducive to learning (Freiberg, 2013). Classroom teachers, then, contribute to student success by being consistently present in the classroom; otherwise, students may not attain the same degree of success (Combs, 2017).

Deliberate interventions are needed to ensure a cognitive change in students (Hattie, 2012). Combs (2017) posited that in the absence of the classroom teacher, students might not experience high degrees of success in relation to behavior, attendance, and learning. Research on the subject, however, has been conflicting (Porres, 2016). Based on the absence of *solid* research in the field and on the aforementioned effect size of the teacher on students (1.62), there is a need to understand further the connection between classroom teacher attendance and student success as defined in this study.

Purpose of the Study

The study will be focused on a combination of student information in connection with classroom teacher information. Specifically, student success data, as defined in this study, and attendance information of classroom teachers in K-5 buildings in a Midwestern school district, will be analyzed. The purpose of this research is to determine whether there is a relationship between classroom teacher presence rates and student

success.

Research questions and hypotheses. The following research questions and hypotheses guided the study:

1. What is the relationship, if any, between classroom teacher attendance and student attendance?

H1₀: There is no relationship between classroom teacher attendance and student attendance.

H1_a: There is a relationship between classroom teacher attendance and student attendance.

2. What is the relationship, if any, between classroom teacher attendance and student behavior?

H2₀: There is no relationship between classroom teacher attendance and student behavior.

H2_a: There is a relationship between classroom teacher attendance and student behavior.

3. What is the relationship, if any, between classroom teacher attendance and student achievement?

H3₀: There is no relationship between classroom teacher attendance and student achievement.

H3_a: There is a relationship between classroom teacher attendance and student achievement.

4. What is the relationship, if any, between student attendance, student behavior, and student learning?

H4₀: There is no relationship between student attendance, student behavior, and student learning.

H4_a: There is a relationship between student attendance, student behavior, and student learning.

5. What is the relationship, if any, between classroom teacher attendance and student success?

H5₀: There is no relationship between classroom teacher attendance and student success.

H5_a: There is a relationship between classroom teacher attendance and student success.

Significance of the Study

The Social Cognitive Learning Theory, developed by Bandura, emphasizes the importance of environmental factors in the learning process (Harinie et al., 2017). Environmental influences play a role in cognition (Bandura, 1978). Freiberg (2013) suggested that student-centered environments lend themselves to higher degrees of student success. Additionally, Frieberg (2013) proclaimed that student-centered environments which are ideal for learning are rooted in positive teacher-student relationships.

Teacher-student relationships have been known to be important for many years (Sparks, 2019). Davis (2013) stated, “Children who have experienced positive relationships with teachers tend to...experience benefits to learning and motivation” (p. 221). In order to cultivate positive relationships and, therefore, create ideal learning environments where knowledge and learning behaviors are effectively adopted by

students, classroom teachers must be consistently present (Combs, 2017).

The findings of this study will allow educators to determine if there is a connection between high rates of classroom teacher presence and student attendance, discipline, academic achievement and, consequently, student success. The outcomes revealed in this study may prove to be critical in attempting to better student success factors. The study's results will be used to guide the Midwestern school district's leadership teams in planning for upcoming school years.

The determination of the impact of classroom teacher attendance and student success will allow individuals who review this study to design teacher professional development programs more effectively with student success in mind. Educators could utilize the outcomes of this study to build curriculum that support professional development but also allow for maximum classroom teacher instruction. Additionally, the study's results could guide policy leaders and policy makers in employee affairs decisions affecting benefits packages and absence management.

Definition of Key Terms

The following terms are defined:

Classroom teacher. The classroom teacher is an individual who “works with one single class for an entire academic year and is responsible for teaching a wide range of subjects” (Gradireland, 2018, para.1).

Classroom teacher absence rate. For the purpose of this study, the classroom teacher absence rate is the number of instructional days the classroom teacher is documented as absent divided by the total number of instructional days as determined by the district or school's calendar.

Direct relationship. A direct relationship occurs when two variables move proportionally in the same direction (Johnson, 2018, para. 5).

Modern-day teacher. The modern-day teacher is defined as an individual responsible for preparing the new generation by instilling deeper learning and thinking processes in students in addition to content knowledge (Akbari, 2016).

Safe harbor method for identification. The safe harbor method for identification is defined by the removal of 18 types of individual identifiers so that no information about any individual exists (Office of Civil Rights, 2012). The 18 identifiers include names, geographic information, dates, phone numbers, fa numbers, email addresses, social security numbers, medical record numbers, health plan beneficiary numbers, account numbers, certificate numbers, vehicle identifiers, device identifiers, web universal resource locators (URLs), internet protocol (IP) addresses, biometric identifiers, photographs, any other unique identifying number (Office of Civil Rights, 2012).

Student attendance. Student attendance is defined as the sum of the number of hours a student is recorded as present divided by the sum of the total number of hours possible as determined by the district or school's calendar (Missouri Department of Elementary and Secondary Education [MODESE], 2018).

Student behavioral incidents. Student behavioral incidents are defined as the number of incidents resulting in either In-School Suspension or Out of School Suspension, as reported by the district to the MODESE (2018).

Student learning. Student learning, for the purpose of this research, is a metric gauged by the number and percentage of students who achieve on or above grade level

status as determined by district assessments.

Student success. Student success, for the purpose of this research, is defined as a state in which a student attains grade level status as determined by district assessment data, while also maintaining a high student attendance rate and low counts of student behavioral incidents.

Delimitations and Limitations

The scope of the study was bounded by the following delimitations:

Time frame. Student discipline, attendance, and achievement data will be obtained during the 2019-2020 school year for school years 2017-2018 through 2018-2019. Classroom teacher attendance data will be obtained during the same timeframe for school years 2017-2018 through 2018-2019.

Location of the study. The study takes place in a large, urban school district in the Midwest.

Sample. Student discipline, attendance, and achievement data of students in grade levels kindergarten through five from one school district in a Midwest state will be used. Classroom teacher attendance data of teachers who are employed by the same Midwest state school district's kindergarten through fifth-grade elementary buildings will also be examined.

Criteria. Students in grades kindergarten through five were considered when designing this study. Additionally, the students identified for this study were associated with their classroom teachers for the purpose of identifying a possible relationship between classroom teacher attendance and student success.

The following limitations were identified in this study:

Sample demographics. This study will be focused primarily on students in grades kindergarten through five who also attend kindergarten through fifth-grade elementary buildings. The concentration on kindergarten through fifth grade is a limitation of the study since students and teachers in grades six through twelve were not included in the sample. In addition, the focus on only kindergarten through fifth-grade elementary buildings restricts the study slightly since several of the elementary buildings within the district were excluded because of the absence of a grade five classroom.

Instrument. Since secondary data in the areas of student attendance, discipline, and achievement will be used in this study, there is a possibility some students will not have all three data points which would disqualify the students' data for inclusion in the study.

The following assumptions were accepted:

1. The classroom teacher of record held a valid teaching certificate from the MODESE.
2. The student population identified for the study had an assessment record on file with the Midwestern school district.

Summary

According to Stronge (2018), teachers have an impact on student success. Education has shifted from an employee-oriented paradigm to a student-centered paradigm (Zhao, 2015). In this model of education, the importance of interpersonal relationships is emphasized (Freiberg, 2013). Optimal, person-centered learning environments created through interpersonal relationships “facilitate higher achievement” (Freiberg, 2013, p. 228).

Combs (2017) reported that educators are absent 16-20% of the time (para. 1). The instructional time lost may have an impact on student success factors (Miller, 2017). To determine the possible impact of classroom teacher presence on student success, secondary attendance, behavior, and achievement data will be analyzed using various statistical methods.

In Chapter One, the study was introduced, and a framework for the study was provided. Next, the problem and purpose of the research were briefly discussed, and the research questions and hypotheses were listed. Additionally, the significance of the study was presented, and a list of key terms was provided. Finally, the delimitations and limitations of the study were discussed.

In Chapter Two, a review of literature will be presented. The review will consist of an exploration of the role of the teacher. In addition, an overview of the social cognitive learning theory will be provided, and factors influencing learning will be discussed in more detail.

Chapter Two: Review of Literature

In Chapter Two, current and past research are explored to establish context for the purpose of this study. As previously discussed, teachers have the most profound effect size on student achievement and play an important role in student success (Killian, 2017). Inconsistent classroom teacher attendance may negatively impact student success (Combs, 2017).

According to Porres (2016), credible research in the field on the aforementioned factors is lacking. Therefore, it is necessary to explore the possible link between classroom teacher attendance and student success. The pages that follow lay the philosophical and theoretical foundation for the study for which the aims is to determine whether there is a relationship between classroom teacher presence rates and student success as defined by this study. Also, the importance of the teacher in the learning process as it pertains to the social cognitive learning theory proposed by Bandura in 1977 is highlighted.

Theoretical Framework

Bandura introduced the social cognitive learning theory in 1977 (Harinie et al., 2017). In Bandura's (1989) theory, the importance of behavioral, environmental, and individual factors in the learning process was highlighted. Understanding how learning occurs involves understanding the interactions between these three factors (Bandura, 1989). "Behavior can affect cognitive and vice versa individual cognitive activities can affect the environment..." and "environmental influences can alter individual thought process" (Harinie et al., 2017, para.9). This phenomenon can be defined as reciprocal determinism (American Psychological Association, 2020).

Bandura defined reciprocal determinism as the “basic analytic principle for analyzing psychosocial phenomena at the level of intrapersonal development, interpersonal transactions, and interactive functioning of organizational and social systems” (Bandura, 1978, para.1). The individual, behavior and the environment all influence one another (Essays, UK, 2018). According to Bandura (1989), the following factors fall within each of the three above-mentioned categories:

- Individual: personal knowledge, expectations, skills
- Behavioral factors: self-efficacy, confidence, attitude
- Environmental factors: social norms, community standing, and the ability to influence or change one’s environment.

Bandura (1989) specifically emphasized observational learning in the social cognitive learning theory. Observational learning is characterized by individuals learning through the process of observation (Harinie et al., 2017). In 1961, Bandura performed his famous “Bobo doll experiment” (Nolen, 2020, para.1). The experiment involved the physical and verbal abuse of an inflatable toy by adults in the presence of young children, which resulted in those children mimicking the abusive behavior (Nolen, 2020).

Bandura’s Bobo doll experiment established part of the social cognitive learning theory in that its results led to the discovery that learning occurs through social modeling (Nolen, 2020).

Bandura’s social cognitive learning theory involves three assumptions (Harinie et al., 2017):

1. Individual learning occurs by imitating environmental and behavioral observations.

2. Individuals are connected closely to their environment, and learning occurs through the interaction of an individual's behavior, cognition, and environment.
3. Learning outcomes manifest as a result of observing of everyday model behaviors.

Individuals tend to observe model behavior in their environment and then begin to imitate those behaviors (Bandura, 1989). As learning occurs, the learner is able to cognitively present the modeled behavior as their own learned behavior (Harinie et al., 2017).

Cocroft (2015) indicated that students attain knowledge and new behaviors through observation, which would imply that selective observation of a behavior model would be a necessary component of student learning. Additionally, the importance of the environment is considered in the social cognitive learning theory (Bandura, 1989). Educators are responsible for fostering optimal learning environments (Hattie, 2012). Person-centered and positive environments promote higher degrees of student success (Freiberg, 2013). To determine the presence or absence of a relationship between classroom teacher presence and student success, this study was focused on the interaction between behavioral, environmental, and individual factors influenced by the classroom teacher. Additionally, the ability of the classroom teacher to be observed by students will be considered as part of the study.

The Role of the Teacher

Greek philosopher Aristotle stated, "Those who educate children well are more to be honored than they who produce them; for these only gave them life, those the art of living well" (as cited in McGasko, 2019, para. 1). While this declaration may date back

to ancient times, the statement still holds true (McGasko, 2019). Teachers play a role in student success (Stronge, 2018).

Throughout American history, the role of the classroom teacher has evolved with the needs of society (Sloan, 2012). During the 20th century, teachers were tasked with preparing students for the industrial workforce (Wagner, 2015). Industrial enterprises dominated the American workplace throughout the 1900's (Encyclopedia.com, 2020). Manufacturing plants which produced automobiles, farm machinery, electrical equipment and textiles were prominent (Encyclopedia.com, 2020). Factories required "docile, agreeable workers," who were compliant and punctual (Schrager, 2018, para.2). As a result, educators were tasked with creating universal education where "education was provided by the state, and learning was regimented" (Schrager, 2019, para.3). Factory schools, as they are called now, tasked teachers with taking an impersonal, efficient, and standardized approach to training students for an industrial career (Schrager, 2018).

Toffler stated that factory schools were the ingenious machines "constructed by industrialism to produce the kind of adults it needed" (Watters, 2015, para.14). Notable educators, such as Montessori, are credited for adequately preparing students to thrive (McGasko, 2019). Historically, didactic modes of teaching were used in the classroom whereby teachers would pass on traditional knowledge through lecture to instill knowledge (Ducharme & Ducharme, 2020). Students would then demonstrate their learning through recall of information through writing, reciting or repetition of the presentation (Ducharme & Ducharme, 2020). Much of student success was determined by students' ability to memorize information (Ducharme & Ducharme, 2020). Many believed that teaching was "a processes of passing knowledge from teacher to student and

that learning” (Ducharme & Ducharme, 2020, para. 4).

There has been a shift of seismic proportions within education and the global business environment that can be attributed to globalization (DuFour & DuFour, 2015). The world has changed drastically (Care, Kim & Scoular, 2017). Modern technology has changed the way we do business by transforming communication and increasing opportunities for learning and collaboration (Care et al., 2017). The environment is ever-changing, and workplaces are more dependent on divergent thinkers and problem solvers (Care et al., 2017).

The aforementioned shift requires changes in educational processes (Care et al., 2017). To instill the new, entrepreneurial mindset, teachers must lead their students, as well as their peers, through processes that prepare students to think skillfully and deeply (Costa & Kallick, 2015). Higher-order thinking skills are a main 21st century educational component that students need to adopt (Cox, 2019). “Higher-order thinking takes thinking to a whole new level,” (Cox, 2019, para.2). Students are able to use complex thinking processes during their learning experience in order to understand different disciplines rather than memorizing facts (Cox, 2019). According to Tankersley (2020), higher-order thinking allows students to go beyond the basics. Students can more deeply understand and apply insightful and sophisticated interpretations of material and situations (Tankersley, 2020). The ability for students to understand then allows them to relate their thinking process to other situations using their background knowledge as a foundation (Tankersley, 2020).

Possessing higher-order thinking skills such as creativity and critical thinking is becoming increasingly important for students entering the workforce (Rainie &

Anderson, 2017). Globalization and dependency on ever-changing technologies has made these skills high in demand (Wichtowska, 2019). Higher-order thinking skills allow individuals to develop new products and ways of working (Wichtowska, 2019).

Work-place leaders are noticing there is a “significant gap between the skills students are leaving school with and those necessary to make an impact in today’s working world” (Wichtowska, 2019, para. 4). The classroom teacher is tasked with instilling habits of the mind (Skilbeck, 2017). It is the responsibility of the classroom teacher to provide learning experiences for students that prepare them for the 21st century workplace and global environment (Nola, 2020). Modern-day classroom teachers must nurture the development of higher-order thinking skills in order to effectively prepare students to live and work outside of the classroom (Nola, 2020).

An often-referenced model, Bloom’s Taxonomy, “helps teachers teach and students learn” (Heick, 2020, para. 1). Bloom’s taxonomy was developed in the 1950’s by psychologist Benjamin Bloom (Lasley II, 2020). According to Petram (2011), the levels of the model are described as follows:

- Knowledge- when the student is able to recall information, or naturally attempts to recall material exposed to in past classroom experiences.
- Comprehension- when the student is able to understand meaning, explain and restate ideas. A student has reached the level of comprehension when he/she can interpret and extrapolate basic information.
- Application-when the student is able to use learned material in new situations. A student has reached the level of application when he/she can apply ideas and skills to problem solve.

- Analysis- when the student is able to separate information and material into segmented parts and recognize relationships between the parts. The student will also be able to distinguish between fact and opinion.
- Synthesis- when the student has the ability to formulate new stories, ideas and/or relationships by using learned principles. A student is able to synthesize when he/she can present knowledge in a unique format and by building structures from different sources.
- Evaluation- when the student is able to establish validity of information through the review of research, facts, and ideas.

The model enables more clear thinking about “the structure and nature of knowledge” (Lasley, 2020, para. 10) and gives teachers a way to consider how their teaching practices can influence student learning (Heick, 2020).

Because the role of the teacher has evolved, new teaching strategies rooted collaborative, project-based techniques are needed (Nola, 2020). As such, teachers must engage in various professional development activities to build leadership capacity (DuFour & DuFour, 2015). The need for educators to participate in professional development activities has led to a surge in absenteeism and has, therefore, negatively impacted the amount of instructional time given to students (Miller, 2017). Miller (2017) stated, “There is no substitute to students learning from their own teacher” (para. 3). According to Miller (2017), student success is negatively impacted when there are higher degrees of teacher absences.

Environment

Bandura highlighted the importance of environmental factors in the learning process in the social cognitive learning theory (Harinie et al., 2017). Environmental factors are a “major force in development” (Nabavi, 2012, para. 5). Students, however, are not limited by environmental influences (Cherry, 2018). Bandura’s social cognitive learning theory suggests that individuals play an active role in the development of their environment (Bandura, 1978). Behavioral and individual factors are influenced by the environment, and vice-versa (Bandura, 1978). “External influences play a role...in cognition” (Bandura, 1978, para. 21). According to Freiberg (2013), person-centered environments rooted in inter-personal relationships lend themselves to higher degrees of student success. Teachers are responsible for creating environments that are conducive to optimal student learning (Hattie, 2012).

Student-centered environments are linked with increased student achievement (Freiberg, 2013). In a 2009 study, Freiberg (2013) found that student-centered classroom management techniques resulted in higher student achievement in both reading and math as compared to control groups (see Table 1).

Table 1

Student Achievement by Classroom Environment Type

Group	Reading Percentile	Math Percentile
Student-centered	64th	67th
Control Group	50th	50th

Note. Adapted from “Classroom Management and Student Achievement” by H. J. Freiberg, 2013, *International Guide to Student Achievement*, p. 229. Copyright 2013 by Taylor & Francis.

The student-centered environment can be described as one in which trust, empathy, and equality are promoted (Zuconni, 2015). This type of environment supports empowerment, learning, and well-being by “facilitating the development of the potentialities of individuals, groups and organizations” (Zuconni, 2016, para. 17). According to Zuconni, the student-centered approach is a research-based, solution-oriented way to create optimal outcomes (2016). The student-centered method focuses on the whole child and building relationships in order to foster growth, responsibility, and self-regulation in students (Zuconni, 2016). These environmental factors interact to create an environment open to error (Hattie, 2012). A safe space where error is accepted, according to Hattie (2012), is an environment in which learning thrives.

The student-centered environment is achieved by fostering self-regulation in students and strong relationships with students (Zuconni, 2016). Fusing emotional and cognitive factors in the learning process helps to create an environment where the threat level is low to the student (Graetz, 2006). According to Hwang (2017), in order to maintain this type of environment, the classroom teacher must be able to identify subtle differences in their students and act on them.

Classroom teachers are able to consistently evaluate the current state of their classroom ecosystem (Stronge, 2018). According to Stronge (2018), classroom teachers are in tune with their students’ individual abilities, accomplishments, and areas of opportunity. This awareness allows classroom teachers to monitor learning, consume feedback and act, which results in greater mastery of the learning content (Hattie, 2012).

Classroom teachers who are consistently absent pose a threat to student achievement (Combs, 2017). Hattie (2012) reported that the effect size of an

inexperienced teacher on feedback and monitoring of learning was 0.3 units lower than the effect size of an experienced classroom teacher (p. 33). Factors associated with the classroom teacher have the largest effect size with regard to student achievement (1.62) (Killian, 2017, para. 2). Classroom environmental awareness has an impact on student achievement and, therefore, student success (Miller, 2017).

Classroom teachers are the managers of the classroom (Fisher, 2017). Teachers are responsible for creating an optimal learning environment (Hattie, 2012). Classroom management, often used synonymously with student behavior, is a pillar of student success (Freiberg, 2013). According to past research, decreased disciplinary actions result in increased student achievement, and the environment that the classroom teacher creates is linked to student behavior (Freiberg, 2013). By influencing the classroom environment, the teacher influences student behavior by proxy (Freiberg, 2013).

Classroom management is an important factor in influencing student success (Freiberg, 2013). A teacher's ability to manage student behavior impacts the number of disciplinary issues and the quality of learning occurring in the classroom (Kapur, 2018). According to Freiberg (2013), disruptive behavior can be minimized by creating positive learning environments.

Bandura's reciprocal determinism framework alludes to the fact that the environment affects behavior (Bandura, 1978). Guardino and Fullerton stated that an optimal environment can decrease disruptive behavior and increase student success by impacting levels of engagement during the learning process (2012). A well-organized, welcoming, safe and positive environment will lead to less distraction and interruption through disruptive behavior (Guardino & Fullerton (2012). Classroom teachers must

proactively monitor their classroom environment in order to maintain and/or improve learning conditions (Guardino & Fullerton, 2012).

Classroom teachers have a higher effect on the creation of an optimal classroom environment when compared to inexperienced teachers (Hattie, 2012). There is a 0.6-unit difference in the effect classroom teachers have on the classroom climate when compared to inexperienced teachers (Hattie, 2012, p. 33). Effective management of the classroom is a responsibility that falls on the classroom teacher (Fisher, 2017). The ability of the classroom teacher to create a climate that promotes learning is linked to behavioral influences that might result in the disruption of the learning process (Freiberg, 2013). Consistent management is the main component of an optimal learning environment, and an expert classroom teacher is more likely to achieve such an environment through relationships (Hattie, 2012).

Student attendance is connected to positive student outcomes (Miller, 2017). Higher rates of student attendance are correlated with higher degrees of academic achievement (Bauer, 2018). Student attendance establishes the baseline for student success (Bauer, 2018). According to Bauer, students who are present in the classroom are being exposed to the social environment and the academic material often required for grade-level advancement or graduation (2018). Alternatively, if students are absent, they are more likely to “lack reading skills, have lower test scores, receive exclusionary school discipline and have a higher risk of not graduating” (Elias, 2019, para. 1).

The state of the classroom climate has been linked to student attendance (Freiberg, 2013). Elias stated that positive learning environments where students are engaged and feel welcome often result in students wanting to attend school (2019).

According to Elias (2019), a positive learning environment is inspiring, supportive, safe and healthy, respectful and engaging. Student attendance can be negatively impacted by a decreased quality of the classroom ecosystem, which is directly related to the influence of the classroom teacher (Freiberg, 2013).

Higher degrees of student success are a result of student-centered environments (Freiberg, 2013). The classroom teacher is responsible for creating an ideal learning environment in which students thrive (Hattie, 2012). The ability of the classroom teacher to be successful in this endeavor requires a consistent presence in the classroom; otherwise, students may not experience the same successful outcomes (Combs, 2017).

Relationships

Hattie suggested that teacher-student relationships have a 0.52 effect size in regard to student achievement (Visible Learning Plus, 2017, p. 2). This metric is significant, given the fact that it is above the hinge-point of 0.40 identified by Hattie (2012) for determining the effectiveness of teaching and learning practices (p. 3). Students who have high-quality relationships with their classroom teachers tend to be more motivated and achieve at higher rates (Davis, 2013).

Researchers in education have long been aware of the importance of teacher-student relationships (Sparks, 2019). Optimal learning environments are based on a foundation of positive relationships (Sparks, 2019). A recent review of 46 studies indicated that strong teacher-student relationships were positively associated with metrics such as higher attendance, higher academic achievement, and lower suspension rates (Sparks, 2019, para. 7). Conversely, the aforementioned metrics were less desirable when relationships between the teacher and student were strained or non-existent (Davis,

2013).

During a typical school year, students and classroom teachers spend a lot of time together (Sparks, 2019). However, millions of students are missing a large percentage of school days for various reasons (excused, unexcused and suspensions) (Attendance Works, 2018a). Low attendance rates during the elementary years (kindergarten through fifth grade) correlate with decreased academic achievement and poor attendance rates in later years (Attendance Works, 2014). Chronically absent students are less likely to graduate (Attendance Works, 2014).

Educators can battle absenteeism by building positive relationships with their students (Waterford.org, 2019). Students who believe they are entering an environment where they will be safe and cared for are more likely to attend school (Waterford.org, 2019). In turn, students' risk of falling behind decreases due to increased exposure to instruction (Waterford.org, 2019). Personal connections between teachers and students positively impact student attendance and, therefore, academic achievement (Sparks, 2019).

Students who have meaningful relationships with their classroom teachers are more motivated to learn (Waterford.org, 2019). Strong relationships can have a major impact on student engagement (UNSW Media, 2019). In a study performed in Sydney, Australia, researchers observed students in high school across the country, and assessed the interaction of those students with their teachers (UNSW Media, 2019). The results of the assessment determined that students with positive relationships with their classroom teachers “participated more in class...had more enjoyment in their learning” and were more driven to continue their learning (UNSW Media, 2019, para.4). The general

increase in student engagement leads to a greater focus on disciplinary mastery which will likely lay a foundation for academic and career success for students (Waterford.org, 2019).

Teacher-student relationships play a role in student behavior as well (Stephens, 2015). Classroom teachers who prioritize relationships with their students tend to be able to better manage their classroom due to bonds of mutual respect and trust (Terada, 2019). Students who feel emotionally connected to their teacher and feel a sense of belonging within their classroom environment are more likely to display positive behaviors and cause less disruptions (Terada, 2019). Generally, classroom teachers can positively impact students' self-regulation abilities and motivate them to learn and take risks by forming relationships (Blazar & Kraft, 2016).

The relationship between classroom teachers and students is critically important in student success (Sparks, 2019). As Ford stated, teachers' priority must be to learn students and build real connections with them, show respect for their culture, and affirm their worthiness to receive the best education possible (Sparks, 2019). Student success metrics tend to be more desirable when strong teacher-student relationships exist (Blazar & Kraft, 2016).

Classroom teachers are able to foster relationships effectively with students and, therefore, create a person-centered, positive learning environment (Freiberg, 2013). According to Hattie (2012), high value, experienced teachers are more likely to make their students feel cared for and heard; whereas inexperienced teachers are less likely to create those same feelings. This type of consideration for students is the crux of the person-centered environment concept (Fazio, Pace, Flinner, & Kallmyer, 2018).

A 2018 study conducted by Theisen-Homer explored how teachers might explore the development of relationships with their students (Sparks, 2019). Theisen-Homer proclaimed that teachers may take either an instrumental path or they may have more of an instrumental focus (Sparks, 2019). The instrumental path involves a single-direction relationship where teacher collected individual student information in effort to affect their behavior (Taminiqu, Ferguson & Moser, 2016). The reciprocal focus, however, is a more holistic approach where teachers and students engage in problem-solving together, and students have adults that affirm and respond to their input (Sparks, 2019).

Instrumental, one-way relationships tend to be more focused on adherence to authority (Cherry, 2020). The following, according to Cherry (2020), are characteristics of authoritarian teacher-student relationships:

- Teachers are demanding, but not responsive.
- Teachers do not nurture. Instead, they are seemingly cold and harsh.
- Teachers are punitive, and value disciplinary actions over positive reinforcement.
- Teachers do not negotiate or provide options for their students.
- Teachers do not tolerate misbehavior and provide no explanation for why certain behaviors are undesirable.
- Teachers do not give students freedom to make good choices, but rather micromanage situations in order to ensure mistakes are not made.
- Teachers shame students in order to force them to behave according to their standards.

Teachers who take the instrumental approach to formulating relationships with their students may notice negative consequences in terms of student success (Cherry, 2020).

Reciprocal relationships tend to be connected, balanced, and interrelated (Greenspan, 2020). According to Moore (2020), characteristics of a reciprocal relationship are:

- Teachers openly communicate with students and their families.
- Teachers consistently demonstrate that they value building beneficial relationships with students and their families.
- Teachers make students the central focus on decisions made within the school and with parents.
- Teachers actively pursue the collection of feedback and suggestions in order to increase the quality of the student-teacher relationship.
- Teachers encourage collaboration among students, their peers and their families and are highly in tune with each child's position in the class.

Reciprocal relationships help “create environments where children feel relaxed and confident”, and, therefore, provide more support for higher degrees of student success (Moore, 2020, para. 2).

Behavioral Factors

Behavioral factors also influence student success (Harinie et al., 2017). According to Blazar and Kraft (2017), by implementing “strong organizational and management structures,” teachers can impact the development of self-regulation behaviors in students (sec. 2). Self-regulated approaches to learning often have desirable results (Gafoor & Kurukkan, 2016). By properly managing the dynamics of the classroom through the use of effective strategies, classroom teachers can inspire new learning behaviors in students and, therefore, positively influence student success

(Catapano, 2019).

Classroom teachers are able to affect and teach student self-regulation through modeling (Parrish, 2018). Modeling occurs when a behavior is intentionally displayed to provoke imitation (Build Family Resilience, 2016, para. 1). Gooblar (2015) referenced Bandura when stating that individuals learn by watching others. According to prior research, the observation of a model leads to the effective development of social skills and proper classroom behaviors (Build Family Resilience, 2016). Learning can and does occur through observation (Cherry, 2019). Observation occurs through attentively watching a model, which suggests that a model must be present for observational learning to occur (Cherry, 2019).

According to Freiberg (2013), “classroom management is the gatekeeper of learning,” and it has an impact on student self-reflection and regulation (p. 228). Jackson and Peck (2018) referenced Sousa, Machado and Pardal in stating that students’ ability to regulate themselves is a “prerequisite for adaptive development and behavior” (para. 3). Educators who can teach self-regulation tend to achieve a more optimal learning environment, which lends itself to student success (Jackson & Peck, 2018).

In the social cognitive learning theory, Bandura stated that aspects of individuals’ behavior affect the environment (Bandura, 1989). Behavior that creates classroom disturbances and interferes with the classroom teacher’s ability to deliver instruction is considered disruptive (Ministry of Education, Guyana, 2015). Disruptive behavior can negatively impact the classroom environment and, therefore, negatively impact student success (Ministry of Education, Guyana, 2015).

Disruptive behavior in the classroom is one of the largest factors seriously

diminishing the learning process (Ghazi, Shahzada, Tariq, & Pakhtunkhwa, 2013). Given the fact that behavior has a significant impact on the classroom environments, it is important to recognize disruptive behaviors and learn to control them through management strategies (Bandura, 1989). Ghazi et.al suggested that there is a relationship between the type of disruptive behavior conducted by students in the classroom and the impact on classroom management (2013).

Field experts have identified management methods that aid in the development of student self-regulation and, therefore, ideal learning environments (Jackson & Peck, 2018). According to Parrish (2018), teachers who set and communicate clear expectations create a structured and safe space for students. Classroom teachers who are able to foster an optimal learning environment through management strategies such as effective communication and clear expectations will realize higher levels of student success (Hattie, 2012).

Effective communication can have a large impact on student outcomes (Educational Leaders, 2020). In fact, most problems in the classroom can be attributed to lack of communication and/or inadequate communication (Educational Leaders, 2020). Davis (2013) posited two major dimensions describe the dynamic between teachers and students: influence and proximity.

Directive behavior displayed by the teacher is said to be influential (Davis, 2013). Directive tactics are used to influence and develop groups of people (students) in order to increase performance, confidence and, ultimately, results (Warren, 2020). Classroom teachers can implement directive communication as a method to manage student behavior in effort to create an optimal learning environment (Warren, 2020). Simple delivery of

instruction and clarity of expectations reduces the risk of confusion and frustration among students which impacts student behavior and, therefore the classroom environment (Warren, 2020).

While directive communication determines a teacher's influence over the classroom dynamic, conversational tone determines proximity (Davis, 2013). According to Warren, it is important to be both clear and courteous when delivering instruction (2020). A respectful tone can positively impact trust, satisfaction, and commitment in relationships (Kelleher, 2009). Proximity is able to help to shape the relationship and communication style between classroom teachers and the students (Davis, 2013). The ability of teachers and students to effectively communicate builds connection and respect, which results in a more positive learning environment with fewer disruptions and more meaningful instruction (Konen, 2017). The following strategies can help classroom teachers develop an optimal student-teacher dynamic (Warren, 2020):

1. Maintain attention
2. Make sure the communication is clear
3. Simplify and specify the message
4. Monitor for signs of understanding
5. Continuously observe and follow-up with students

Classroom teachers who implement the strategies above will likely establish more positive relationships with students (Warren, 2020).

Individual Factors

In the social cognitive learning theory, Bandura stated that learning is influenced by individual factors related to both the student and the teacher (Harinie et al., 2017). Individual characteristics of both parties plays a role in developing crucial aspects required for optimal learning (Blazar & Kraft, 2017). Idiosyncratic as well as general individual aspects affect the quality of learning in the classroom (McCormick, Alavi, & Hanham, 2015). Students' engagement in the classroom, combined with classroom teachers' ability to present knowledge, assess understanding, and foster relationships, affects the quality of learning in the classroom (Ashwin & McVitty, 2015).

General individual aspects such as gender and age are considered to be important, but very apparent (McCormick et al., 2015). Idiosyncratic individual traits such as self-efficacy, personality, perception, and general cognitive ability tend to be unique to every individual (McCormick et al., 2015). Idiosyncratic individual traits, on the part of the student and the teacher, tend to have more of an impact on student success (Demenech-Betoret, Abellan-Rosello & Gomez-Artiga, 2017).

Demenech-Betoret et al. quoted Bandura in stating that self-efficacy can be defined as “an individual’s belief in his or her own ability to organize and implement action to produce the desired achievements and results” (2017, para. 3). Self-efficacy tends to be a strong predictor of student success (Demenech-Betoret et al., 2017). Students tend to develop self-efficacy based on the level of support and direction given by their classroom teachers (Butcher & Pletcher, 2015). Teachers can cultivate self-efficacy in individual students in the following ways (Butcher & Pletcher, 2015):

- Responding to student behavior

- Modeling self-efficacy
- Providing appropriate tasks and opportunities to succeed
- Providing encouragement and feedback

Classroom teachers who effectively respond to student behavior develops student self-efficacy by “helping children connect what they are doing with how the world is reacting to their behavior” (Butcher & Pletcher, 2015, para.1). Once students begin to realize the effect that they can have on the environment, they start to develop their self-awareness (Butcher & Pletcher, 2015). Students’ observation of self-efficacy displayed by the classroom teacher is another strategy for student self-efficacy development (Butcher & Pletcher, 2015). Displays of persistent effort followed by success impact students’ beliefs about their own ability to realize success (Cherry, 2020). In addition, students’ observation of perseverance in the classroom helps to build a positive learning environment where students are encouraged to try, fail, and repeat the cycle until success is achieved (Kirk, 2020). Yet another strategy for student self-efficacy development is providing students opportunities to succeed. Proper task assignment is important in developing self-efficacy in students; the task must be “slightly above the students” current ability level so the goal is attainable, but not too easy (Kirk, 2020, para. 6). A final strategy for teachers to utilize while trying to cultivate self-efficacy in students is to provide feedback and effective communication (Chowdhury, 2020). Positive, credible reinforcement and verbal persuasion builds self-efficacious students (Kirk, 2020).

In order to develop proper relationships as well as build and sustain optimal learning environments, teachers need high levels of self-efficacy as well (Kirk, 2020). Teachers who believe in their capabilities to increase student success will likely be able

to implement reciprocal relationships with students and thus create suitable learning environment (Hattie, 2012). Self-efficacy in teachers also makes them more willing to take risks and experiment with tactics meant to motivate students and enhance their learning experience (Kirk, 2020).

Self-efficacy in students is a large predictor of student success (Demenech-Betoret et al., 2017). Teachers have a large impact on whether or not students recognize and embrace their own strengths (Butcher & Pletcher, 2015). It is more likely that students in a classroom with a consistently present teacher will recognize higher degrees of student success as defined by this study (Miller, 2017).

Personality is another idiosyncratic, individual trait that affects the learning process (McCormick et al., 2015). According to McCormick et al., a 2007 study focused on the Big-Five personality traits, determined that performance was related to personality (2015). The Big-Five, according to Grohol (2019), is a system used to scientifically evaluate the following core personality traits that are consistently represented throughout cultures and the world:

- Extraversion-measures the degree of an individual's socialization and enthusiasm.
- Agreeableness-measures the level of an individual's friendliness and kindness.
- Conscientiousness-measures an individual's work ethic
- Emotional Stability (i.e. Neuroticism)-measures an individual's tendency to remain calm and steady.
- Intellect-measures the level of creativity, innovation, and general curiosity of an individual.

There are significant relationships between four of the Big-Five personality traits

(extraversion, agreeableness, conscientiousness, and intellect) and student success (Erfani & Mardan, 2017). Emotional stability, however, is negatively correlated with student success (Erfani & Mardan, 2017).

Experts at Arkansas State University proclaim that classroom teachers have a large role in the development of students' personalities (Arkansas State University, 2019). Students are impacted by proper, or improper, personality development in that personality traits are directly correlated with student success (Erfani & Mardan, 2017). Students are more likely to embrace their individuality and develop personality traits positively correlated with student success when exposed to consistently present teachers (Miller, 2017).

According to McCormick et al., perception and attention play a role in student success (2015). Students' perception of instructional material, the school environment and general educational worthiness impact the degree to which students succeed in the classroom and school in general (Hazari, 2014). Perception is described as psychological process that "refers to the way sensory information is organized, interpreted, and consciously experienced" (Lumen Learning, 2020, para. 1). Classroom teachers delivers instruction to every student the same way; however, every student will experience and interpret the material differently due to each child's unique individuality (Hazari, 2014). Many factors may cause the varying perception of content, but one of those factors is attention (Lumen Learning, 2020). Attention determines what is perceived (Lumen Learning, 2020), by allowing individuals to deal with one or two out of possibly several simultaneous events (Cherry, 2019).

Perception and attention play a role in the development of student self-efficacy

and, therefore, student success (McCormick et al., 2015). Students need to focus on factors that drive self-efficacy beliefs (i.e. teachers), and derive information concerning their capabilities and strengths from their observations (McCormick et al., 2015). However, in order to develop accurate self-efficacy beliefs, students must first perceive their models (teachers) as relevant and then focus on the relevant model behaviors (McCormick et al., 2015). Classroom teachers are more likely to be viewed as relevant and worthy of observation when consistently present (Miller, 2017). In the absence of the classroom teacher, students may develop lower-quality self-efficacy beliefs due to fact that there is no foundational knowledge about their strengths (personal and academic) (Combs, 2017). Student self-efficacy affects student success (Demenech-Betoret et al., 2017). Low degrees of self-efficacy negatively impact student success (Demenech-Betoret et al., 2017).

As previously discussed, teachers affect the cultivation of an optimal learning environment (Hattie, 2012). Students' perception of their environment determines the degree to which students will succeed relative to academic achievement, behavior and attendance (Hazari, 2014). Students that perceive their learning environment as positive are more likely to experience success (Hazari, 2014). In order to create the type of environment in which students feel safe, heard, and connected, teachers must be in the classroom regularly (Miller, 2017).

Students' individual cognitive abilities affect learning and the degree of success students experience (Cox, 2020). Cognitive skills are defined as mental abilities that are heavily used in the learning process (du Plessis, 2015). Previous research regarding how cognitive skills affect learning

have resulted in the determination that strong cognitive skills result in fast, easy learning and weak cognitive skills result more labored learning (du Plessis, 2015).

The following cognitive skills are essential to student success (Cox, 2020, para. 1-6).

- Concentration
- Memory
- Processing Speed
- Logic
- Auditory Perception
- Visual Processing

Students use these skills systematically to acquire knowledge (du Plessis, 2015). When any one of them are lacking, students struggle (Cox, 2020). However, cognitive skills, such as those listed above can be improved through training (du Plessis, 2015).

Classroom teachers who use their professional abilities to recognize students' cognitive skills need improvement can strengthen and enhance learning performance (du Plessis, 2015).

Student success is highly impacted by the cognitive abilities and the aforementioned professional knowledge mastered by the classroom teacher (Stronge, 2018). Professional knowledge encompasses not only subject area or content knowledge but also the ability to recognize surface-level and deeper learning (Hattie, 2012). A classroom teacher is able to design lessons tailored to students in a particular classroom environment (Hattie, 2012). Subsequently, the classroom teacher can assess levels of learning and effectively respond to student needs (Hattie, 2012).

Additionally, classroom teachers are better able to organize and use professional knowledge to positively impact student achievement (Darling-Hammond, Flook, Cook-Harvey, Barron & Osher, 2019). Inexperienced teachers who enter the classroom due to classroom teacher absence have neither depth of content knowledge nor the ability to construct information in a way that students can deeply absorb (Dogonay & Ozturk, 2011). A 2008 study revealed that 74% of students reflected a deeper understanding of content knowledge in classrooms lead by expert classroom teachers (Hattie, 2012, p. 33). Alternatively, 29% of students in non-expert classrooms reflected a deep understanding of content knowledge (Hattie, 2012, p. 34).

Furthermore, classroom teachers are able to foster relationships effectively with students and, therefore, create the person-centered, positive learning environment required to decrease behavioral disruptions (Freiberg, 2013, p. 229). According to Hattie (2012), high value, experienced teachers are more likely to make their students feel cared for and heard; whereas inexperienced teachers are less likely to create those same feelings. This type of consideration for students is the crux of the person-centered environment concept (Fazio et al., 2018).

Student engagement is a crucial pillar of optimal learning (Dyer, 2015). For a student to engage, he or she must be supported throughout the learning process by the classroom teacher (Association for Supervision and Curriculum Development, 2016). Classroom teachers are tasked with building strong relationships between themselves and their students; thereby, providing a medium of support (Sparks 2019). By fostering relationships and creating optimal learning environments based on those relationships, classroom teachers play a critical role in student engagement and, therefore, student

learning (Dary, Pickeral, Shumer, & Williams, 2016).

Summary

In Chapter Two, the Social Cognitive Learning theory was discussed as a framework for this study. In addition, the role of the classroom teacher was explored, and research alluding to the impact teachers have on environmental, behavioral, and individual factors that affect learning was presented. In summary, Bandura highlighted the importance of the interaction between environmental, behavioral, and individual factors within an observational context in the social cognitive learning theory (Harinie et al., 2017). Each factor influences student learning in a different capacity (Harinie et al., 2017). Also, the role of the teacher influences every factor giving credence to the claim that the classroom teacher has an impact on student success (McGasko, 2019).

Chapter Three contains the methodology of the study. Following a preview of the chapter, the problem and purpose of the study and the research questions and hypotheses are reviewed. The data collection and analysis methods are presented next. The ethical considerations and measures taken to assure anonymity and confidentiality are explained, followed by a summary of the chapter.

Chapter Three: Methodology

In Chapter Three, the design of the study will be presented. First, the problem and purpose of the study, associated research questions, and hypotheses are reviewed. Next, the methodology in terms of data collection and analysis is discussed in detail to enable replication of the study. Finally, ethics, as they pertain to this study, are presented.

Problem and Purpose Overview

Teachers play a critical role in the development and success of students (Stronge, 2018). Combs (2017) posited that in the absence of the classroom teacher, students might not experience high degrees of success in relation to behavior, attendance, and learning. The problem is that teachers are absent 16% to 20% of the time (Combs, 2017, para.1). The purpose of the study is to reiterate the criticality of the role of the classroom teacher in regard to student success and to determine the relationship between classroom teacher presence rates and student success.

Research questions and hypotheses. The following research questions and hypotheses guided the study:

1. What is the relationship, if any, between classroom teacher attendance and student attendance?

H₀: There is no relationship between classroom teacher attendance and student attendance.

H_a: There is a relationship between classroom teacher attendance and student attendance.

2. What is the relationship, if any, between classroom teacher attendance and student behavior?

H2₀: There is no relationship between classroom teacher attendance and student behavior.

H2_a: There is a relationship between classroom teacher attendance and student behavior.

3. What is the relationship, if any, between classroom teacher attendance and student achievement?

H3₀: There is no relationship between classroom teacher attendance and student achievement.

H3_a: There is a relationship between classroom teacher attendance and student achievement.

4. What is the relationship, if any, between student attendance, student behavior, and student learning?

H4₀: There is no relationship between student attendance, student behavior, and student learning.

H4_a: There is a relationship between student attendance, student behavior, and student learning.

5. What is the relationship, if any, between classroom teacher attendance and student success?

H5₀: There is no relationship between classroom teacher attendance and student success.

H5_a: There is a relationship between classroom teacher attendance and student success.

Research Design

Secondary data will be analyzed for the purpose of this research. Student behavior, student attendance, student learning, and classroom teacher attendance data will be gathered from a midwestern school district's K-5 buildings for school years 2016 through 2018. A purposive sampling technique will be used to best serve the purpose of the research (Palinkas et al., 2015). Data points in the aforementioned areas for 10,400 students and 1,000 classroom teachers K-5 will be gathered and triangulated to determine whether there is a link between classroom teacher attendance and student success.

Population and Sample

The focus of this study is on a purposive sample of a population of 1,000 classroom teachers and 10,400 students in grades kindergarten through fifth grade in a Midwestern school district. Classroom teacher presence rates will be reviewed in relation to student attendance rates, student behavior incidents, and student learning to determine if there is a relationship between classroom teacher presence rates and student success. The purposive sample will consist of a single district in southwest Missouri with 10,400 students enrolled in grades kindergarten through fifth grade (District Data, 2018, p. 5). Research participants lacking one or more data points will be excluded from the study.

Instrumentation

This research was based on several instruments generated by the Missouri Student Information System (MOSIS) as well as instruments created and distributed by Curriculum Associates and Frontline. Existing instruments were chosen as a basis for this study since such instruments are expertly designed (Fraenkel, Wallen, & Hyun, 2019). According to Fraenkel et al. (2019), such instruments are preferred.

MOSIS instruments. The reliability of the MOSIS instruments is based on systematic programming of the data collection system, which is aligned to state and federal reporting guidelines (MODESE, 2018). Validity is also determined by the aforementioned systematic programming, which specifies the purpose of each file submission and data point, as well as alerts users to errors (MODESE, 2018). These alerts minimize the risk of corruption and contribute to the validity of the data collected (MODESE, 2018). The specific MOSIS instruments used in this study were:

- October Student Core- Includes information about LEP census data, enrollment, September membership, and demographics (MODESE, 2018, p. 67).
- October Course Assignment- Includes information about courses and course/teacher assignments (MODESE, 2018, p. 67).
- June Enrollment and Attendance- Includes information about student enrollment and attendance (MODESE, 2018, p. 67).
- June Discipline- Includes information about student discipline incidents resulting in out of school suspension (OSS) (DESE CODE SET, 2019) and/or in-school suspension (ISS) (MODESE, 2019).

Though reported in separate files, the data are collected in a manner that allows for interoperability and can, therefore, be linked to provide insight into how a student behaved and attended while enrolled with a specified classroom teacher during any given year (MODESE, 2018).

Curriculum associates instrument. The i-Ready diagnostic is incorporated in this study. I-Ready is an adaptive assessment created and distributed by Curriculum

Associates (2019). The reliability and validity of the i-Ready diagnostic are grounded in extensive research involving correlational studies and assessment design (Curriculum Associates, 2019). Diagnostic results are housed and reported by Curriculum Associates (2019). Scores in multiple areas are assigned upon completion of the assessment in order to provide awareness of student needs and achievement levels (i-Ready Central, 2019).

Frontline education instrument. The school district gathered classroom staff attendance information through the human resources management system; Frontline Education (2019) is a system committed to managing human capital. The reliability of the instrument is based on systematic, product-level programming (Frontline Education, 2019). The validity of the instrument is based on research gleaned from Frontline's Learning Institute, which employs the use of data from millions of users (Frontline Education, 2019). With this system, users at the district are able to record and track staff absences (Frontline Education, 2019).

Data Collection

Permission to conduct this research study will be requested from the Institutional Review Board at Lindenwood University as well as a school district. Following approval of the research, the district's Analytics, Accountability, and Assessment department personnel will be asked to provide a single file containing de-identified student information (demographics, attendance, discipline, and achievement) and de-identified classroom teacher information (attendance). The file requested provided data for school years 2017-2018, and 2018-2019.

The list will be limited to grades K through five for each school year and will only

include the district's K through five buildings (33 buildings). The official student list will be linked to the MOSIS October Course Assignment file to determine classroom teacher assignments for each student (Student + Classroom Teacher File). Official Average Daily Attendance (ADA) student attendance and student discipline will be gathered from the official MOSIS files from the June Enrollment and Attendance and June Discipline files, respectively. Student attendance and discipline attributes will then be linked to the aforementioned Student + Classroom Teacher File to create the Student + Classroom Teacher + Attendance + Discipline File. Student learning, as determined by district assessment data will then be linked for school years 2017-2018 and 2018-2019. This addition will create the full Student Attributes File.

Classroom teacher attendance will then be calculated for each classroom teacher based on the number of days a classroom teacher was present and the number of student contact days per year. A calculation of classroom teacher days present divided by student contact days gives the classroom teacher attendance. These data will be retrieved from the Midwestern school district's human resource data system and linked to the full Student Attributes file to create the Student Attributes + Classroom Teacher Attendance Rate file.

Data Analysis

The aforementioned research questions will be answered using a variety of statistical tests. The Data Analysis tool in Microsoft Excel will be used to conduct those tests. First, the data will be grouped (see Table 2).

Table 2

Groupings for Data Analysis

Group	Independent Variable	Dependent Variable
I	Classroom Teacher Attendance	Student Attendance
II	Classroom Teacher Attendance	Student Behavior
III	Classroom Teacher Attendance	Student Learning
IV	Student Attendance	Student Learning
V	Student Behavior	Student Learning

This grouping method will allow for the determination of a possible link between classroom teacher attendance and student success, both as defined in this study. The existence of a possible link will be evaluated by performing statistical tests; specifically, correlation and linear regression.

A Pearson correlation (Laerd Statistics, 2018) function will be used to determine a “co-movement” (Holmes, Illowsky, & Dean, 2018, p. 533) between (a) student attendance and student learning as determined by district assessment data, (b) student behavior and student learning as determined by district assessment data, (c) classroom teacher attendance and student attendance, (d) classroom teacher attendance and student behavior, (e) classroom teacher attendance and student learning as determined by district assessment data. These correlations will provide insight as to the possible link between classroom teacher attendance and student success. In addition, linear regression will be

used to test the dependence of one “variable on one or more variables” (Holmes et al., 2018, p. 558). Regression will be used to determine whether or not there is a direct relationship, as defined previously, between classroom teacher attendance and student success as determined by student discipline, student attendance, and student learning.

Ethical Considerations

Data files returned to the researcher from the Analytics, Accountability, and Assessment department will be password protected. Additionally, the files will be de-identified according to the Safe-Harbor method described by the Office of Civil Rights (2012). The data described in this study will be obtained from the Midwestern district’s Analytics, Accountability, and Assessment department, and will be prepared by the department’s Data Analytics Specialist in order to avoid a possible conflict of interest.

Summary

In this chapter, the problem and purpose of the study were presented. Next, the population and sample, instrumentation, and data collection and analysis were discussed. Finally, ethical considerations were provided. In summary, the purpose of the study is to determine if there is a relationship between classroom teacher attendance rates and student success in a particular setting. The possible relationship will be determined through the analysis of secondary data obtained from a large school district in the Midwest.

The variables considered will be student attendance, student learning, student behavior, and classroom teacher attendance from the district’s K-5 buildings for school years 2017-2018 through 2018-2019, and the instruments that serve as a basis for this study are expertly designed, existing systems. Data needed to conduct the study will be

collected from these systems upon approval of the research, and statistical tests will be performed in order to determine the possible link between classroom teacher attendance and student success. To avoid a conflict of interest, and to maintain the ethical integrity of this study, a request for data will be submitted through the Midwest district's Analytics, Accountability and Assessment department.

Chapter Four: Analysis of Data

The purpose of this study was to examine student success as it is defined by this study in relation to classroom teacher attendance. The focus of this study was to reiterate the importance of the classroom teacher and understand the relationship between the consistent presence of the classroom teacher and student success. Student discipline, attendance, and achievement data were collected and connected to teacher attendance data to determine the relationship between student success and classroom teacher attendance. A direct relationship between classroom teacher attendance and student success could allow educational leaders to better plan and develop policies that lend themselves to student success as it pertains to this study (higher attendance, lower disciplinary incidents, and higher achievement).

Data Collection

Student achievement, discipline, and attendance data were collected for this study by the Midwestern school district. In addition, classroom teacher attendance data were collected and linked to student data to determine the students that were associated with specific classroom teachers. Following Lindenwood University Institutional Review Board approval, as well as the approval of the Midwestern school district, a single file containing de-identified student information (demographics, attendance, discipline, and achievement) and de-identified classroom teacher information (attendance) was provided. The file included data for school years 2017-2018, and 2018-2019.

The file contained data limited to students in grades kindergarten through fifth grade for each school year (2017-2018 and 2018-2019). Additionally, the file only included students that were enrolled in the district's kindergarten through fifth-grade

buildings (33 buildings). The master file consisted of the following components for the aforementioned school years:

- MOSIS October Course Assignment file
- MOSIS June Enrollment and Attendance File
- MOSIS June Discipline File
- Student Achievement (i-Ready End-of-Year) File for Math and Reading
- Classroom Teacher Attendance File (from the Midwestern school districts human resources tracking system (Frontline))

Students were eligible for this study if data were gathered for all data points (attendance, discipline, and achievement). Students lacking one or more data points were excluded from the study. The number of students in the kindergarten-fifth grades that were deemed eligible for this study was 10,444 and 10,024 for 2017-2018 and 2018-2019 respectively.

Organization of the Chapter

This chapter contains a summary of the data collected to describe the student population and attributes. A breakdown of the students and classroom teachers is presented followed by comparisons of classroom teacher counts and attendance by grade level for each school year 2018 (2017-2018) and 2019 (2018-2019). Table 3 reveals a disaggregated view of the collected data by grade level and shows a summary of eligible student counts, attendance, achievement, and discipline. Table 3 also includes an average of classroom teacher attendance by grade level for both 2017-2018 and 2018-2019.

Table 3

Summary of Student Factors and Classroom Teacher Attendance Data

Grade	Year	Student Count	Student Attendance	Avg. Reading Score	Avg. Math Score	Discipline Incident Count	Teacher Attendance
0	2018	1,757	93.6%	398	379	434	90.6%
	2019	1,715	93.9%	401	381	309	90.2%
1	2018	1,717	94.3%	453	408	392	91.2%
	2019	1,651	94.2%	455	411	456	92.6%
2	2018	1,746	94.2%	497	429	552	91.3%
	2019	1,658	94.6%	503	434	495	91.4%
3	2018	1,828	94.5%	526	452	560	91.8%
	2019	1,716	94.7%	528	453	536	91.1%
4	2018	1,923	94.5%	551	471	772	92.4%
	2019	1,742	95.0%	557	474	652	93.1%
5	2018	1,473	93.9%	567	480	599	92.3%
	2019	1,542	94.7%	569	481	610	91.2%
Total	2018	10,444	94.2%	498	436	3,309	91.6%
	2019	10,024	94.5%	501	439	3,058	91.5%

Note. Kindergarten is represented by grade 0. School year 2017-2018 is represented by year 2018 and school year 2018-2019 is represented by year 2019.

Research questions one through three were answered to discover the nature of the relationship between classroom teacher attendance and student attendance, behavior, and achievement in both reading and math. Then, research question four is answered to determine the existence of a relationship between student attendance, behavior, and achievement in both reading and math. Finally, research question five is addressed to evaluate the possible impact the classroom teacher has on student success as defined by

this study.

Description of All Eligible Research Subjects

Attendance, behavior, and achievement information for students in grades kindergarten through fifth grade was provided by the Midwestern school district for school years 2017-2018 and 2018-2019. Only students who were enrolled in the district's kindergarten-fifth grade buildings were included. Also, each student's classroom teacher attendance information for school years 2017-2018 and 2018-2019 was provided. Students were excluded from the data sample if one or more data points (attendance, behavior, and/or achievement) was missing. Table 4 shows a summary of eligible students versus the total size of the sample population. As Table 4 depicts, out of the 11,290 students enrolled in the Midwestern school district's kindergarten through fifth-grade students, 10,444 (92.5%) were eligible for this study based on the school year 2017-2018. 94.2% were eligible for this study for the year 2018-2019.

Table 4

Summary of All Eligible Students by Grade Level

Grade	2017-2018			2018-2019		
	Eligible	Not Eligible	Total	Eligible	Not Eligible	Total
0	1,757	139	1,896	1,715	112	1,827
1	1,717	145	1,862	1,651	87	1,738
2	1,746	121	1,867	1,658	103	1,761
3	1,828	153	1,981	1,716	94	1,810
4	1,923	145	2,068	1,742	128	1,870
5	1,473	143	1,616	1,542	94	1,636
Totals	10,444	846	11,290	10,024	618	10,642

Note. Kindergarten is represented by grade 0. School year 2017-2018 is represented by year 2018 and school year 2018-2019 is represented by year 2019.

Classroom Teacher Attendance Information

Figure 1 depicts classroom teacher attendance by grade level for school years 2017-2018 and 2018-2019. As shown in Figure 1, classroom teacher attendance never surpassed 93.1%. Kindergarten classroom teachers present the lowest attendance percentage for both years 2017-2018 and 2018-2019. Fourth-grade classroom teachers were present at a higher rate than their Kindergarten, first, second, third, and fifth-grade peers.

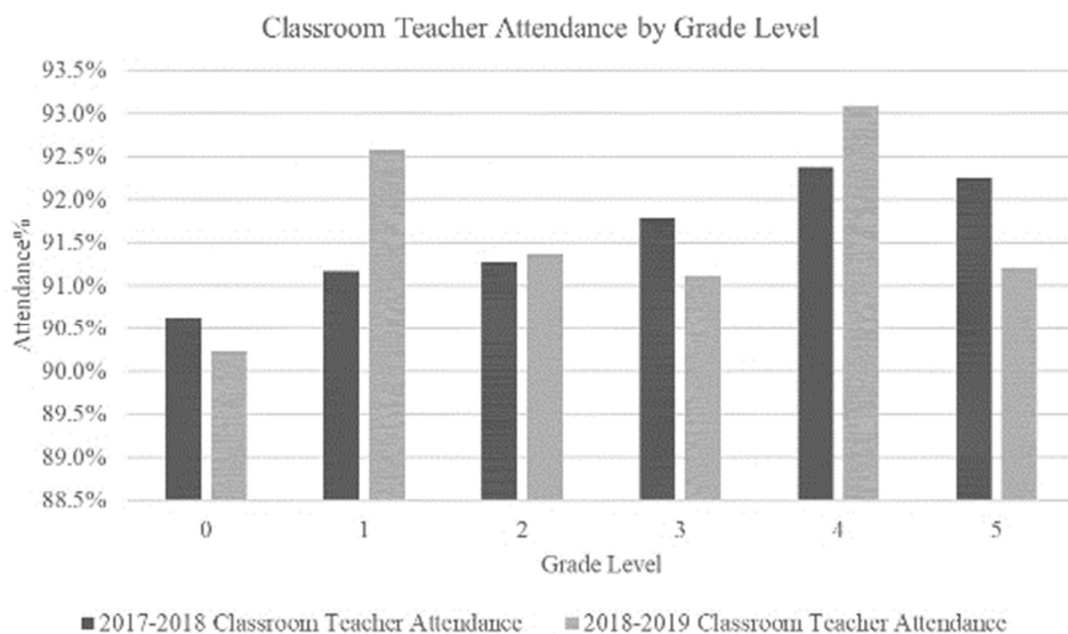


Figure 1. Classroom teacher attendance by grade level.

Figure 2 displays the significance of the differences evident in the kindergarten through fifth-grade classroom teacher attendance rates. The bars in Figure 2 represent the standard deviation of the data set. Attendance rates that fall above or below the standard deviation bar indicate a significant difference between the given attendance rate and the attendance rates presented at other grade levels and/or school years. Kindergarten

classroom teacher attendance was significantly below the attendance rates for classroom teachers in grades one through five for the 2018-2019 school year.

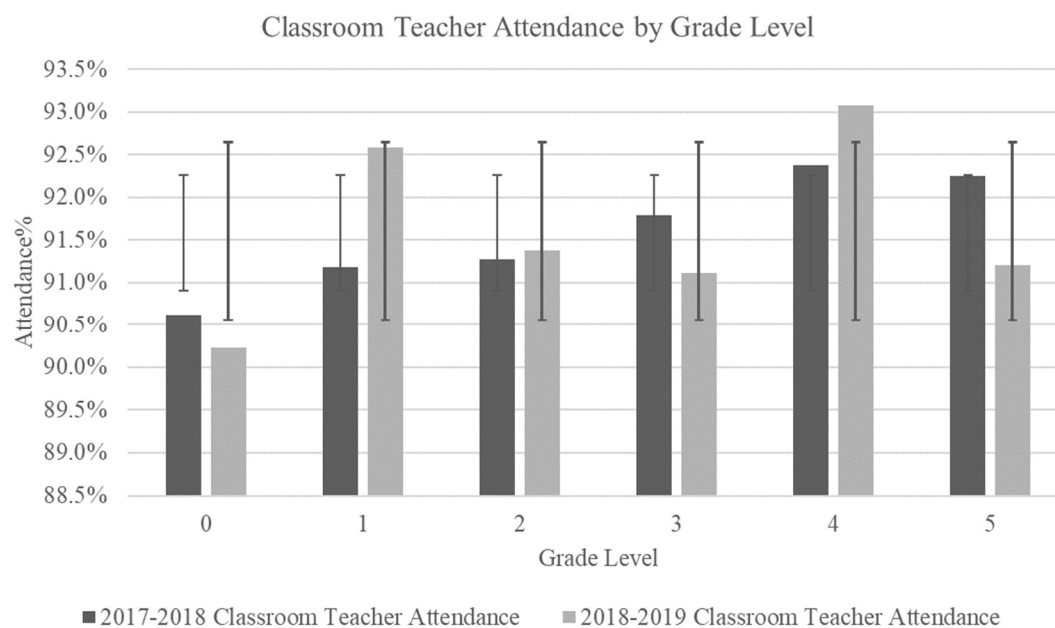


Figure 2. Classroom teacher attendance by grade level with standard deviation.

Research Question One

What is the relationship, if any, between classroom teacher attendance and student attendance?

For school years 2017-2018 and 2018-2019, 10,444 and 10,024 students' attendance rates were eligible for analysis. Table 5 contains a breakdown of student attendance rates and classroom teacher attendance rates by grade level and school year.

Table 5

Summary of Classroom Teacher Attendance and Student Attendance

	School Year	Student Attendance	Classroom Teacher Attendance
0	2018	93.6%	90.6%
	2019	93.9%	90.2%
1	2018	94.3%	91.2%
	2019	94.2%	92.6%
2	2018	94.2%	91.3%
	2019	94.6%	91.4%
3	2018	94.5%	91.8%
	2019	94.7%	91.1%
4	2018	94.5%	92.4%
	2019	95.0%	93.1%
5	2018	93.9%	92.3%
	2019	94.7%	91.2%
Total	2018	94.2%	91.6%
	2019	94.5%	91.5%

Note. Kindergarten is represented by grade 0. School year 2017-2018 is represented by year 2018 and school year 2018-2019 is represented by year 2019.

The first research question was analyzed by conducting a correlation test and regression analysis. The correlation statistic is appropriate when attempting to determine the co-movement of two variables (Holmes, Illowsky, & Dean, 2018). Linear regression is also useful when testing the dependence of “one variable on one or more variables” (Holmes, Illowsky, & Dean, 2018, p. 558).

The correlation coefficient reported when comparing student attendance and classroom teacher attendance was $r = 0.023$, $p = 0.001$. The test was conducted with a 95% confidence interval, and based on p is less than 0.05, the result is statistically significant. However, the results indicated that there is not a strong linear association between student attendance and classroom teacher attendance. Figure 3 shows that there

are varying degrees of outliers surrounding the line of best fit. The display of heteroscedasticity between classroom teacher attendance and student attendance indicates the need for further testing using an alternate method.

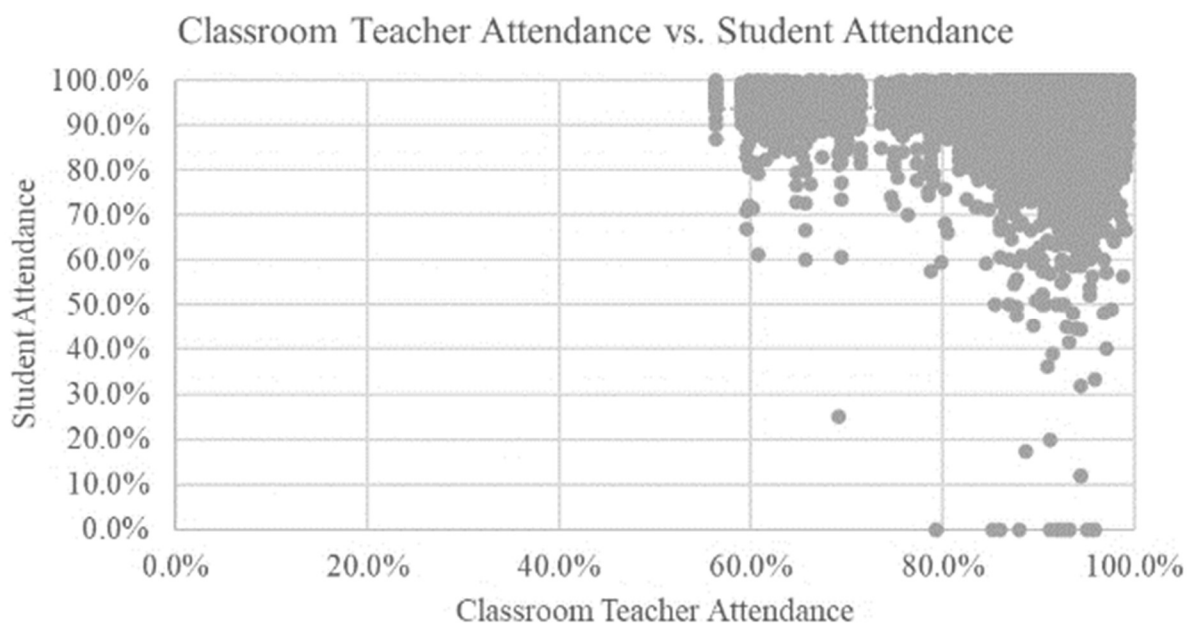


Figure 3. Classroom teacher attendance vs. student attendance scatter plot.

As a second method for observing the relationship between classroom teacher attendance and student attendance, a linear regression analysis was performed. The regression output indicated a significant relationship between classroom teacher attendance and student attendance and revealed dependence between the two variables. Statistically significant dependence between classroom teacher attendance and student attendance was determined by observing a p -value less than 0.05 and a significance factor (Significance F) of 0.001; also, less than 0.05 and less than the F statistic. The linear regression output is shown in Tables 6 and 7.

Table 6

Summary of Regression Analysis (ANOVA)-Classroom Teacher Attendance vs. Student Attendance

ANOVA					
Source of Variation	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	0.379	1	0.038	10.458	0.001
Residual	74.085	20466	0.004		
Total	74.123	20467			

Table 7

Summary of Regression Analysis—Classroom Teacher Attendance vs. Student Attendance

Regression			
Regression Summary	<i>Coefficient</i>	<i>P-Value</i>	<i>Standard Error</i>
Intercept	0.923	0.000	0.006
X Variable	0.022	0.001	0.007

Figure 4 displays the line of best fit between the two variables classroom teacher attendance and student success. Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Attendance} = 0.022 * \text{Classroom Teacher Attendance} + 0.923$$

Because there was a statistically significant dependent relationship between classroom teacher attendance and student attendance, the above linear equation can be used to

predict student attendance based on classroom teacher attendance. Higher rates of classroom teacher attendance resulted in higher rates of student attendance using the linear equation calculation.

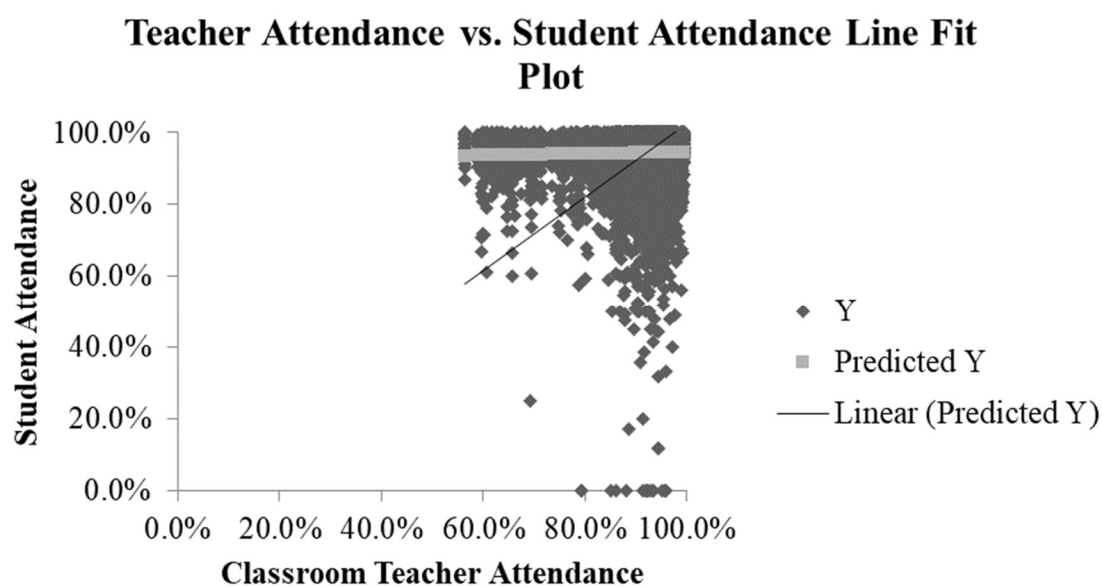


Figure 4. Classroom teacher attendance vs. student attendance line fit plot.

Research Question Two

What is the relationship, if any, between classroom teacher attendance and student behavior?

For school years 2017-2018 and 2018-2019, 10,444 and 10,024 students' behavioral information were eligible for analysis. Table 8 contains a breakdown of student discipline counts and classroom teacher attendance rates by grade level and school year.

Table 8

Summary of Classroom Teacher Attendance and Student Discipline

	School Year	Student Discipline Count	Classroom Teacher Attendance
0	2018	434	90.6%
	2019	309	90.2%
1	2018	392	91.2%
	2019	456	92.6%
2	2018	552	91.3%
	2019	495	91.4%
3	2018	560	91.8%
	2019	536	91.1%
4	2018	772	92.4%
	2019	652	93.1%
5	2018	599	92.3%
	2019	610	91.2%
Total	2018	3309	91.6%
	2019	3058	91.5%

Note. Kindergarten is represented by grade 0. School year 2017-2018 is represented by year 2018 and school year 2018-2019 is represented by year 2019.

Similar to the first research question, the second research question was analyzed by conducting a correlation test and regression analysis. The correlation statistic is used to determine the co-movement of two variables (Holmes, Illowsky, & Dean, 2018).

Linear regression is used when testing the dependence of “one variable on one or more variables” (Holmes, Illowsky, & Dean, 2018, p. 558).

The correlation coefficient reported when comparing student behavioral information and classroom teacher attendance was $r = 0.002$, $p = 0.789$. The test was conducted with a 95% confidence interval. The results are insignificant because p is greater than 0.05. Also, the results indicated that there is not a strong linear relationship between student behavior and classroom teacher attendance. Therefore, the decision was

made to analyze classroom teacher attendance and student behavior data using an additional statistical technique; linear regression.

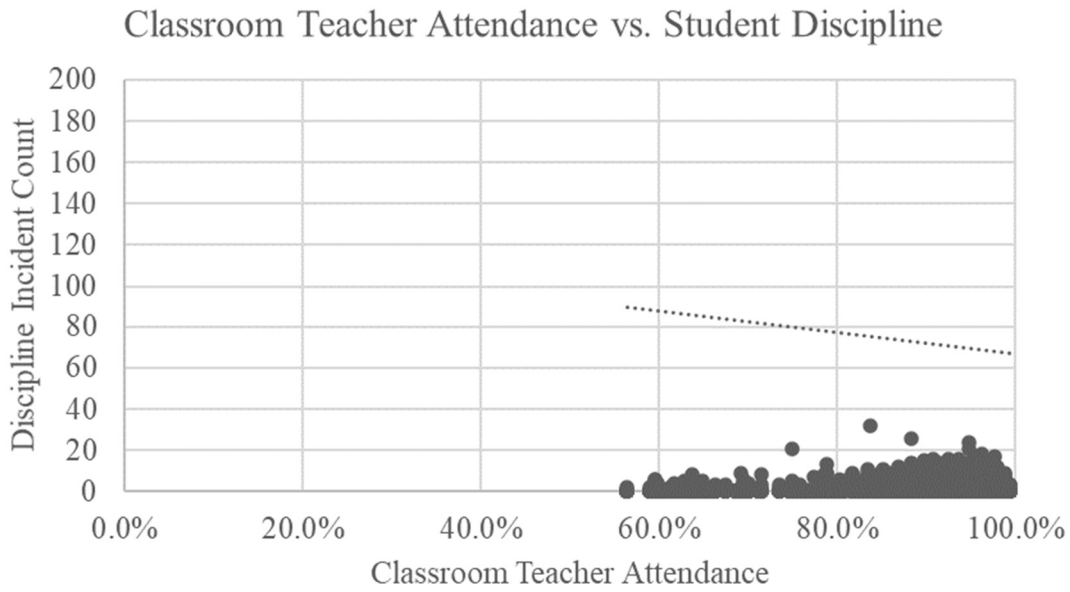


Figure 5. Classroom teacher attendance vs. student discipline scatter plot.

The regression results indicated an insignificant relationship between classroom teacher attendance and student behavior. The results are not statistically significant since the critical values for p are greater than 0.05. The linear regression output is shown in Tables 9 and 10.

Table 9

Summary of Regression Analysis (ANOVA)-Classroom Teacher Attendance vs. Student Discipline

ANOVA					
Source of Variation	SS	df	MS	F	Significance F
Regression	220840	1	220840	0.071	0.789
Residual	6E+10	20466	3092686		
Total	6E+10	20467			

Table 10

Summary of Regression Analysis—Classroom Teacher Attendance vs. Student Discipline

Regression			
Regression Summary	Coefficient	P-Value	Standard Error
Intercept	118.581	0.507	178.652
X Variable	-52.020	0.789	194.670

Figure 6 displays the line of best fit between the two variables classroom teacher attendance and student behavior. Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Discipline Count} = -52.020 * \text{Classroom Teacher Attendance} + 118.581$$

Because there was not a statistically significant dependent relationship between classroom teacher attendance and student discipline counts, the above linear equation cannot be used to predict student discipline counts based on classroom teacher attendance

with any degree of confidence. However, the line of best fit indicates that higher rates of disciplinary infractions occur at lower classroom teacher attendance rates, and the linear equation calculation results in lower numbers of discipline incidents at higher classroom teacher attendance rates. The observable calculation results indicate that there could be a relationship that is not evident due to a limited amount of data.

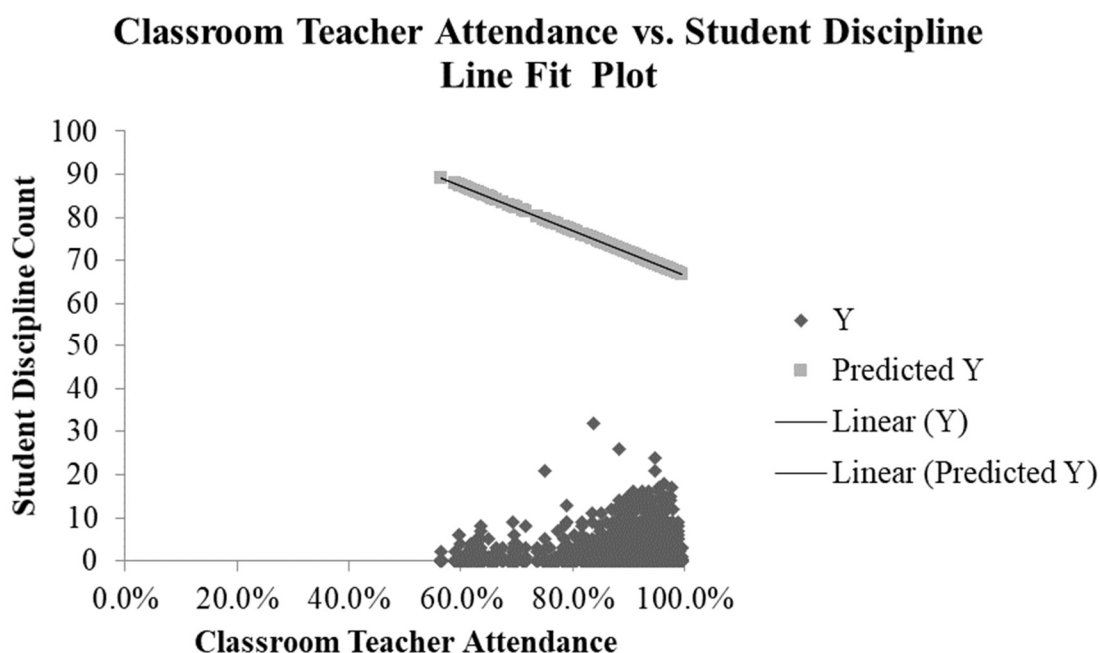


Figure 6. Classroom teacher attendance vs. student discipline line fit plot.

Research Question Three

What is the relationship, if any, between classroom teacher attendance and student achievement?

For school years 2017-2018 and 2018-2019, 10,444 and 10,024 students' reading and math achievement information were eligible for analysis. Table 11 contains a

breakdown of student achievement scores and classroom teacher attendance rates by grade level, subject, and school year.

Table 11

Summary of Classroom Teacher Attendance and Student Achievement

	School Year	Avg. Reading Score	Avg. Math Score	Classroom Teacher Attendance
0	2018	398	379	90.6%
	2019	401	381	90.2%
1	2018	453	408	91.2%
	2019	455	411	92.6%
2	2018	497	429	91.3%
	2019	503	434	91.4%
3	2018	526	452	91.8%
	2019	528	453	91.1%
4	2018	551	471	92.4%
	2019	557	474	93.1%
5	2018	567	480	92.3%
	2019	569	481	91.2%
Total	2018	498	436	91.6%
	2019	501	439	91.5%

Note. Kindergarten is represented by grade 0. School year 2017-2018 is represented by year 2018 and school year 2018-2019 is represented by year 2019.

The third research question was analyzed by conducting a correlation test and regression analysis for each subject, reading, and math. The correlation statistic is used to determine the co-movement of two variables (Holmes, Illowsky, & Dean, 2018).

Linear regression is used when testing the dependence of “one variable on one or more variables” (Holmes, Illowsky, & Dean, 2018, p. 558).

Reading

For reading, the correlation coefficient reported when comparing student achievement information and classroom teacher attendance was $r = 0.094$, $p = 3E-41$. The test was conducted with a 95% confidence interval. The results are statistically significant because p is less than 0.05. However, the result indicated that there is not a strong linear relationship between student achievement in reading and classroom teacher attendance. Figure 7 indicates that there are varying degrees of outliers surrounding the line of best fit.

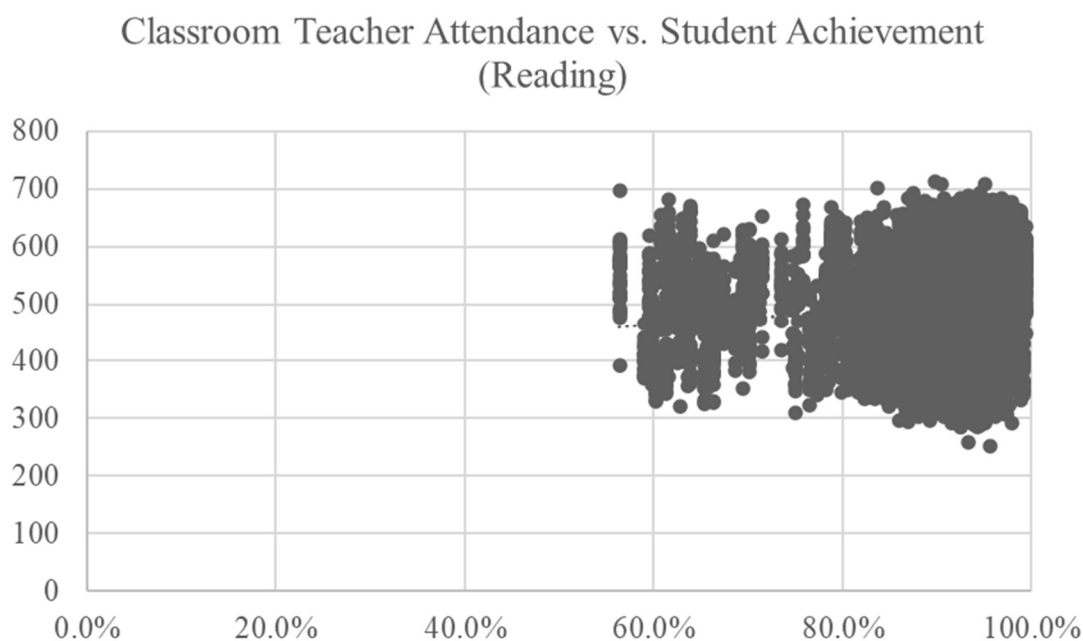


Figure 7. Classroom teacher attendance vs. student achievement (reading) scatter plot.

A linear regression was conducted to analyze the relationship between classroom teacher attendance and reading scores further. The regression results indicated a significant relationship between classroom teacher attendance and student achievement in

reading. The results are statistically significant because critical values for p are less than 0.05. The linear regression output is shown in Tables 12 and 13.

Table 12

Summary of Regression Analysis (ANOVA)-Classroom Teacher Attendance vs. Student Achievement (Reading)

ANOVA					
Source of Variation	SS	df	MS	F	Significance F
Regression	1070089	1	1070089	181.556	3E-41
Residual	1E+08	20466	5894		
Total	1E+08	20467			

Table 13

Summary of Regression Analysis- Classroom Teacher Attendance vs. Student Achievement (Reading)

Regression			
Regression Summary	Coefficient	P-Value	Standard Error
Intercept	394.775	0.000	7.799
X Variable	114.510	3E-41	8.498

Figure 8 displays the line of best fit between the two variables classroom teacher attendance and student achievement (reading). Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Achievement (Reading) Score} = 114.510 * \text{Classroom Teacher Attendance} + 394.775$$

Because there is a statistically significant dependent relationship between classroom teacher attendance and student achievement reading scores, the above linear equation could be used to predict student achievement scores in reading based on classroom teacher attendance. The linear equation calculation results in higher scores when classroom teacher attendance is higher.

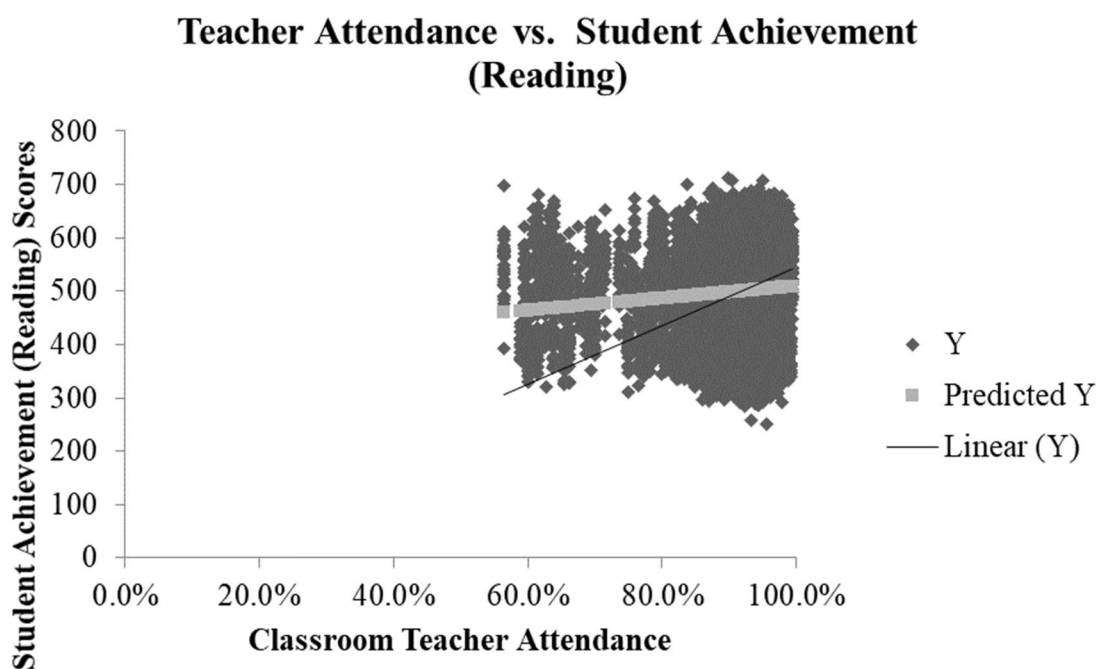


Figure 8. Classroom teacher attendance vs. student achievement (reading) line fit plot.

Math

For math, the correlation coefficient reported when comparing student achievement information and classroom teacher attendance was $r = 0.102$, $p = 2E-48$. The

test was conducted with a 95% confidence interval. The results are significantly significant because p is less than 0.05. However, the results indicated that there is not a strong linear relationship between student achievement in math and classroom teacher attendance. Figure 9 illustrates that there is a lot of variance among the math scores. Therefore, a regression analysis was completed to explore the relationship between classroom teacher attendance and student achievement (math) in more depth.

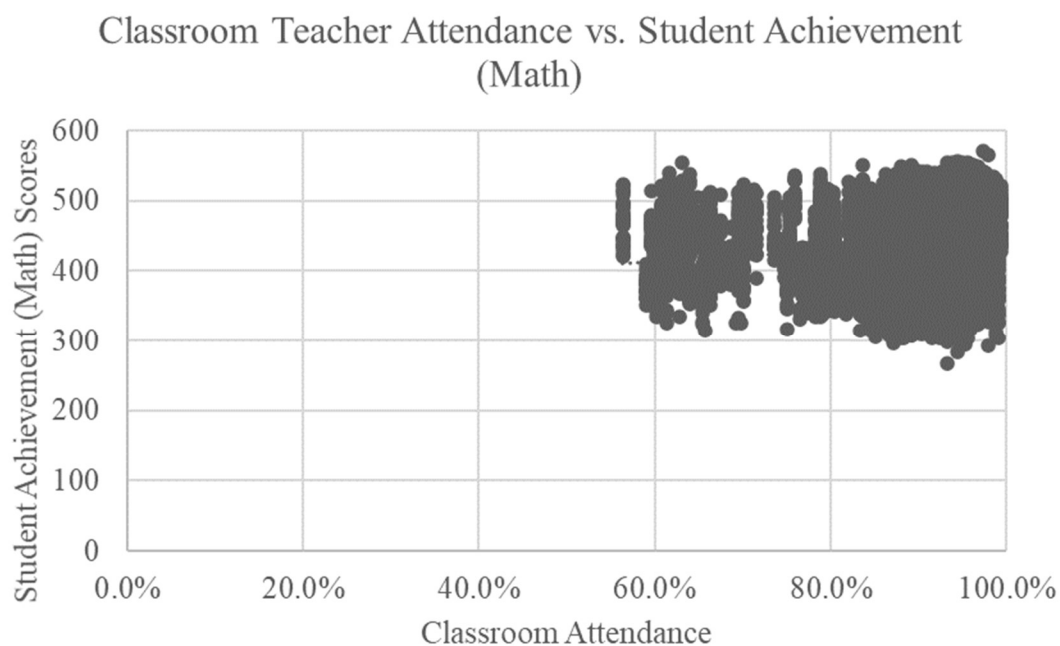


Figure 9. Classroom teacher attendance vs. student achievement (math) scatter plot.

The regression results indicated a significant relationship between classroom teacher attendance and student achievement in math. The results are statistically significant because critical values for p are less than 0.05. The linear regression output is shown in Tables 14 and 15.

Table 14

Summary of Regression Analysis (ANOVA)-Classroom Teacher Attendance vs. Student Achievement (Math)

ANOVA					
Source of Variation	SS	df	MS	F	Significance F
Regression	449216	1	449216	215.233	2E-48
Residual	42714712	20466	207		
Total	43163928	20467			

Table 15

Summary of Regression Analysis- Classroom Teacher Attendance vs. Student Achievement (Reading)

Regression			
Regression Summary	Coefficient	P-Value	Standard Error
Intercept	369.357	0.000	4.641
X Variable	74.192	2E-48	5.057

Figure 10 displays the line of best fit between the two variables classroom teacher attendance and student achievement (math). Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Achievement (Reading) Score} = 74.192 * \text{Classroom Teacher Attendance} + 369.357$$

Because there is a statistically significant dependent relationship between classroom teacher attendance and student achievement math scores, the above linear equation could be used to predict student achievement scores in math based on classroom teacher attendance. The linear equation calculation results in higher scores when classroom teacher attendance is higher.

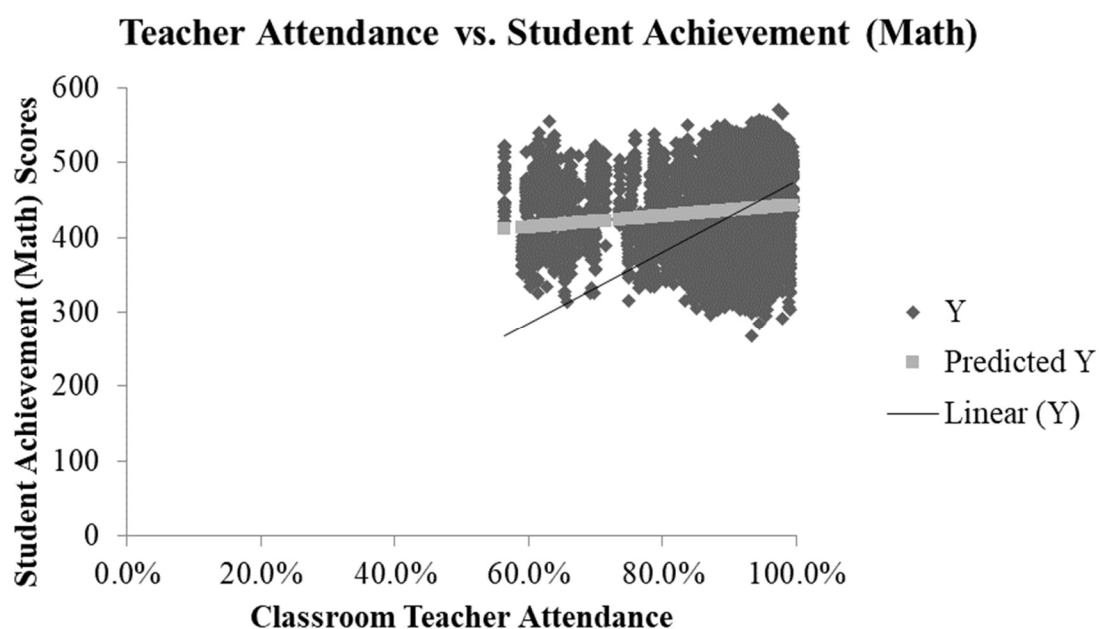


Figure 10. Classroom teacher attendance vs. student achievement (math) line fit plot.

Research Question Four

What is the relationship, if any, between student attendance, student behavior, and student learning?

For school years 2017-2018 and 2018-2019, 10,444 and 10,024 students' achievement, behavior, and attendance information were eligible for analysis. Table 16

contains a breakdown of student achievement scores in reading and math, student behavioral incidents, and student attendance by grade level and school year.

Table 16

Summary of Classroom Teacher Attendance and Student Achievement

	School Year	Avg. Reading Score	Avg. Math Score	Student Discipline Count	Student Attendance
0	2018	398	379	434	93.6%
	2019	401	381	309	90.2%
1	2018	453	408	392	91.2%
	2019	455	411	456	92.6%
2	2018	497	429	552	91.3%
	2019	503	434	495	91.4%
3	2018	526	452	560	91.8%
	2019	528	453	536	91.1%
4	2018	567	471	772	92.4%
	2019	569	474	652	93.1%
5	2018	498	480	599	92.3%
	2019	501	481	610	91.2%
Total	2018	498	436	3,309	91.6%
	2019	501	439	3,058	91.5%

Note. Kindergarten is represented by grade 0. School year 2017-2018 is represented by year 2018 and school year 2018-2019 is represented by year 2019.

The fourth research question was analyzed by conducting a correlation test and regression analysis to determine whether or not there is a relationship between student attendance and student achievement (in reading and math), student behavior and student achievement (in reading and math), and student behavior and student attendance. The correlation statistic was used to determine the co-movement of two variables (Holmes, Illowsky, & Dean, 2018). Linear regression was used to test the dependence of “one variable on one or more variables” (Holmes, Illowsky, & Dean, 2018, p. 558).

Student Attendance versus Student Achievement-Reading

For reading, the correlation coefficient result when comparing student achievement information in reading and student attendance was $r = 0.156$, $p = 8E-112$. The test was conducted with a 95% confidence interval. The results are statistically significant because p is less than 0.05. However, the result indicated that there is not a strong linear relationship between student achievement in reading and student attendance. Figure 11 indicates that there are varying degrees of outliers surrounding the line of best fit (heteroscedasticity). Because of the heteroscedasticity, a linear regression was conducted to analyze the relationship between student attendance and reading scores further.

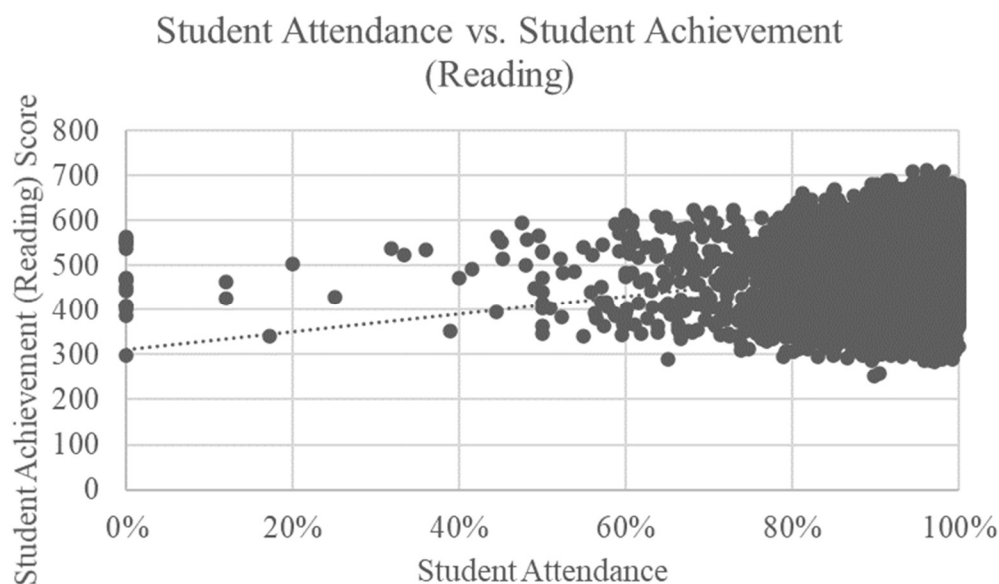


Figure 11. Student attendance vs. student achievement (reading) scatter plot.

The regression results indicated a significant relationship between student attendance and student achievement in reading. The results are statistically significant

because critical values for p are less than 0.05. The linear regression output is shown in Tables 17 and 18.

Table 17

Summary of Regression Analysis (ANOVA)-Student Attendance vs. Student Achievement (Reading)

ANOVA					
Source of Variation	SS	df	MS	F	Significance F
Regression	2965892	1	2965892	511	8E-112
Residual	1E+08	20466	5801		
Total	1E+08	20467			

Table 18

Summary of Regression Analysis- Student Attendance vs. Student Achievement (Reading)

Regression			
Regression Summary	Coefficient	P-Value	Standard Error
Intercept	310.941	6E-293	8.361
X Variable	200.334	8E-112	8.847

Figure 12 displays the line of best fit between the two variables student attendance and student achievement (reading). Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Achievement (Reading) Score} = 200.334 * \text{Student Attendance} + 310.941$$

Because there is a statistically significant dependent relationship between student attendance and student achievement reading scores, the above linear equation can be used to predict student achievement scores in reading based on student attendance. The linear equation calculation results in higher scores when student attendance is higher.

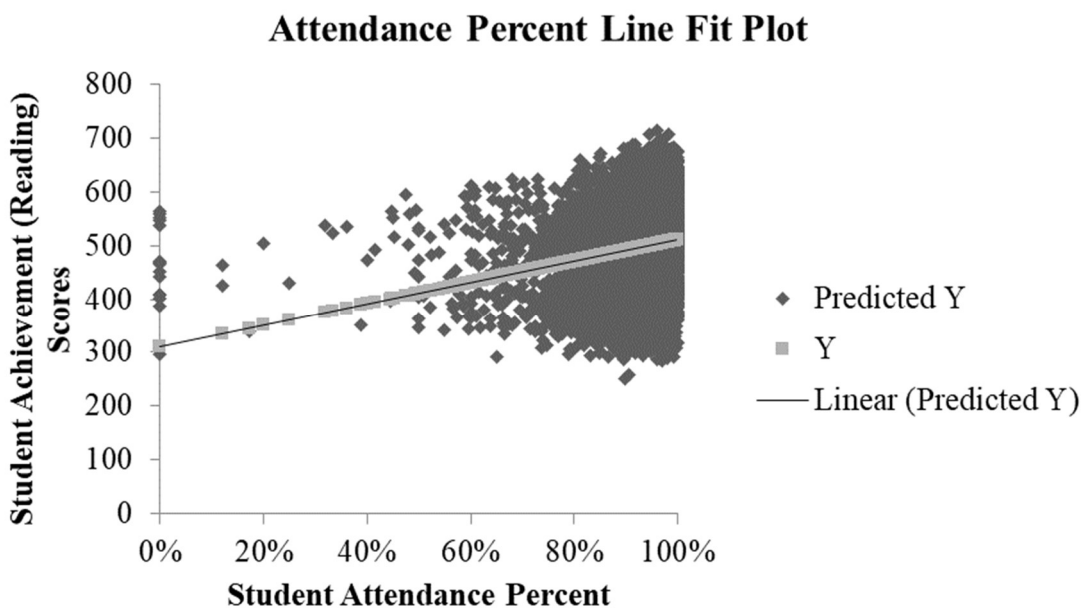


Figure 12. Student attendance vs. student achievement (reading) line fit plot

Student Attendance versus Student Achievement-Math

For math, the correlation coefficient result when comparing student achievement information in math and student attendance was $r = 0.171$, $p = 8E-135$. The test was conducted with a 95% confidence interval. The results are statistically significant because p is less than 0.05. However, the result indicated that there is not a strong linear relationship between student achievement in math and student attendance. Figure 13 indicates that there are varying degrees of outliers surrounding the line of best fit (heteroscedasticity). Because of the heteroscedasticity, a linear regression was conducted

to analyze the relationship between student attendance and student achievement (math) scores further.

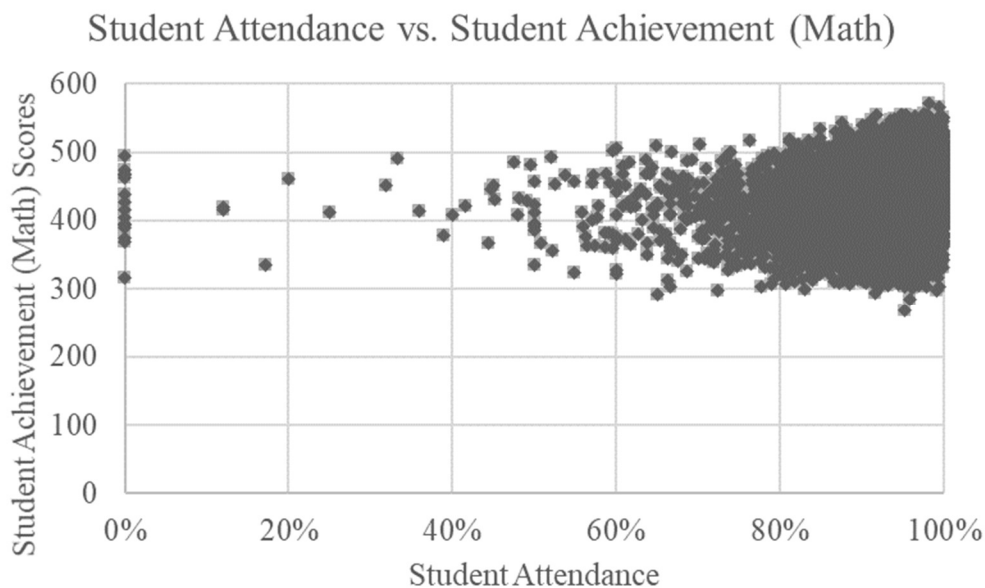


Figure 13. Student attendance vs. student achievement (math) scatter plot.

The regression results indicated a significant relationship between student attendance and student achievement in math. The results are statistically significant because critical values for p are less than 0.05. The linear regression output is shown in Tables 19 and 20.

Table 19

Summary of Regression Analysis (ANOVA)-Student Attendance vs. Student Achievement (Math)

ANOVA					
Source of Variation	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>

Regression	1269045	1	1269045	619.939	8E-135
Residual	41894883	20466	2047		
Total	43163928	20467			

Table 20

Summary of Regression Analysis- Student Attendance vs. Student Achievement (Math)

Regression

Regression Summary	Coefficient	P-Value	Standard Error
Intercept	313.882	0.000	4.967
X Variable	130.847	8E-135	5.255

Figure 14 displays the line of best fit between the two variables student attendance and student achievement (math). Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Achievement (Math) Score} = 130.8469 * \text{Student Attendance} + 313.8682$$

Because there is a statistically significant dependent relationship between student attendance and student achievement math scores, the above linear equation could be used to predict student achievement scores in math based on student attendance. The linear equation calculation results in higher scores when student attendance is higher.

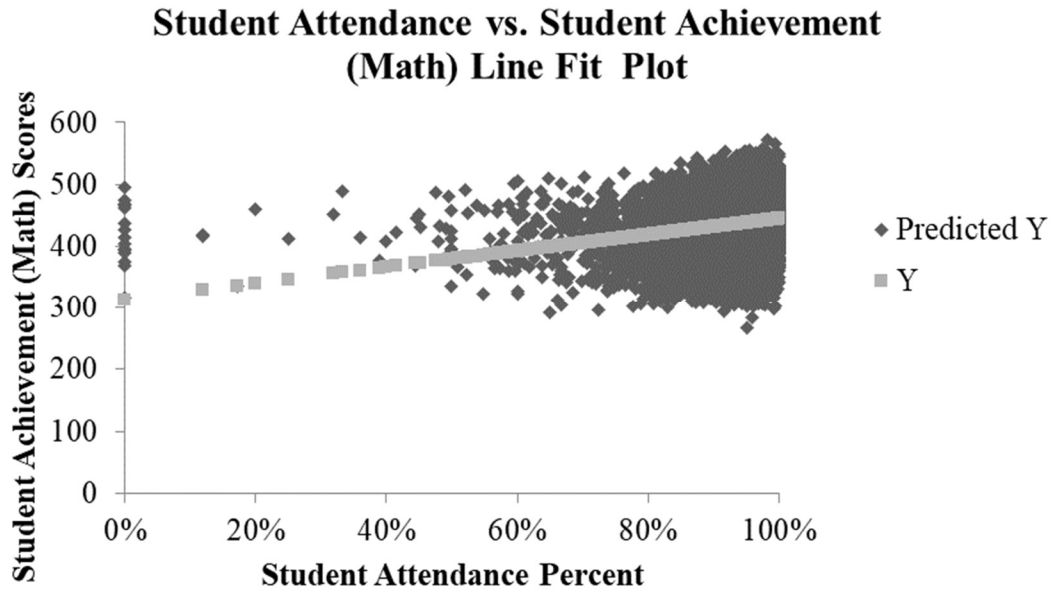


Figure 14. Student attendance vs. student achievement (math) line fit plot.

Student Behavior versus Student Achievement-Reading

For reading, the correlation coefficient result when comparing student achievement information in reading and student behavior was $r = 0.017$, $p = 0.014$. The test was conducted with a 95% confidence interval. The results are statistically significant because p is less than 0.05. The result indicates that there is not a strong linear relationship between student achievement in reading and student behavior. However, Figure 15 indicates that there are varying degrees of outliers surrounding the line of best fit (heteroscedasticity). Because of the heteroscedasticity, a linear regression was conducted to analyze the relationship between student behavior and reading scores further.

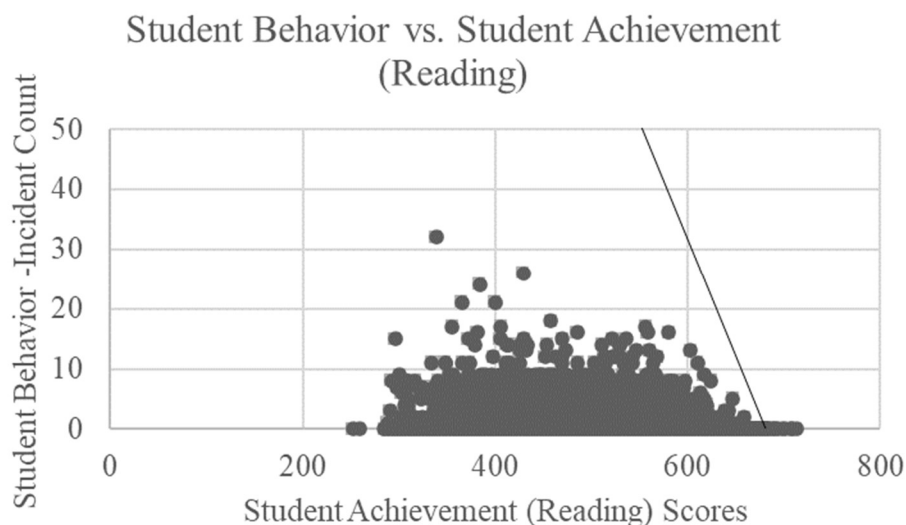


Figure 15. Student behavior vs. student achievement (reading) scatter plot.

The regression results indicated a significant relationship between student behavior and student achievement in math. The results are statistically significant because critical values for p are less than 0.05. The linear regression output is shown in Tables 21 and 22.

Table 21

Summary of Regression Analysis (ANOVA)-Student Behavior vs. Student Achievement (Reading)

ANOVA					
Source of Variation	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	35457	1	3557	5.965	0.014
Residual	1E+08	20466	5945		
Total	1E+08	20467			

Table 22

Summary of Regression Analysis- Student Behavior vs. Student Achievement (Reading)

Regression

Regression Summary	<i>Coefficient</i>	<i>P-Value</i>	<i>Standard Error</i>
Intercept	499.667	0.000	0.539
X Variable	0.001	0.014	0.000

Figure 16 displays the line of best fit between the two variables student behavior and student achievement (reading). Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Achievement (Reading) Score} = -0.001 * \text{Student Behavior Incident Count} + 499.667$$

Because there is a statistically significant dependent relationship between student behavior and student achievement reading scores, the above linear equation could be used to predict student achievement scores in math based on student behavior. The linear equation calculation results in higher scores when student behavior incident counts are lower.

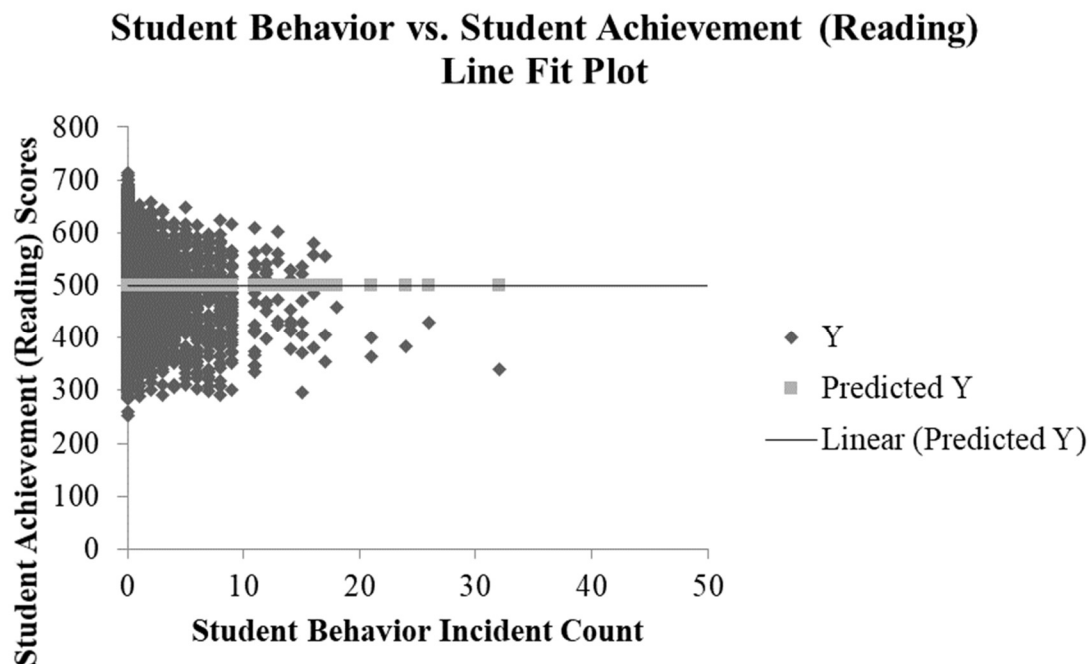


Figure 16. Student behavior vs. student achievement (reading) line fit plot.

Student Behavior versus Student Achievement-Math

For math, the correlation coefficient result when comparing student achievement information in reading and student behavior was $r = 0.020$, $p = 0.005$. The test was conducted with a 95% confidence interval. The results are statistically significant because p is less than 0.05. The result indicates that there is not a strong linear relationship between student achievement in math and student behavior. Figure 17 indicates that many outliers are surrounding the trendline (heteroscedasticity). Because of the heteroscedasticity, a linear regression was conducted to analyze the relationship between student behavior and reading scores further.

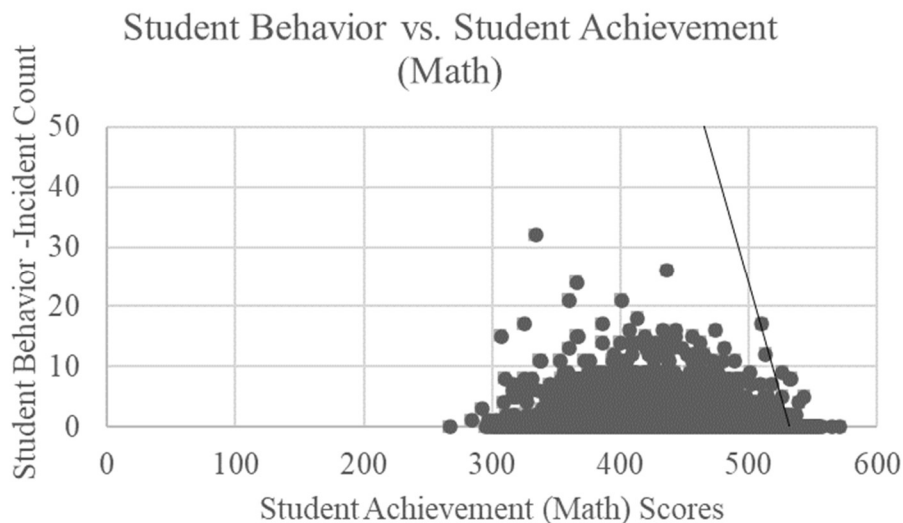


Figure 17. Student behavior vs. student achievement (math) scatter plot.

The regression results indicated a significant relationship between student behavior and student achievement in math. The results are statistically significant because critical values for p are less than 0.05. The linear regression output is shown in Tables 23 and 24.

Table 23

Summary of Regression Analysis (ANOVA)-Student Behavior vs. Student Achievement (Math)

ANOVA					
Source of Variation	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	16711	1	16711	7.927	0.005
Residual	43147217	20466	2108		
Total	43163928	20467			

Table 24

Summary of Regression Analysis- Student Behavior vs. Student Achievement (Math)

Regression

Regression Summary	<i>Coefficient</i>	<i>P-Value</i>	<i>Standard Error</i>
Intercept	437.320	0.000	0.321
X Variable	-0.001	0.005	0.000

Figure 18 displays the line of best fit between the two variables student behavior and student achievement (math). Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

Student Achievement (Math) Score = -0.001*Student Behavior Incident Count + 437.320

Because there is a statistically significant dependent relationship between student behavior and student achievement math scores, the above linear equation could be used to predict student achievement scores in math based on student behavior incident count.

The linear equation calculation results in higher scores when student behavior incident count is lower.

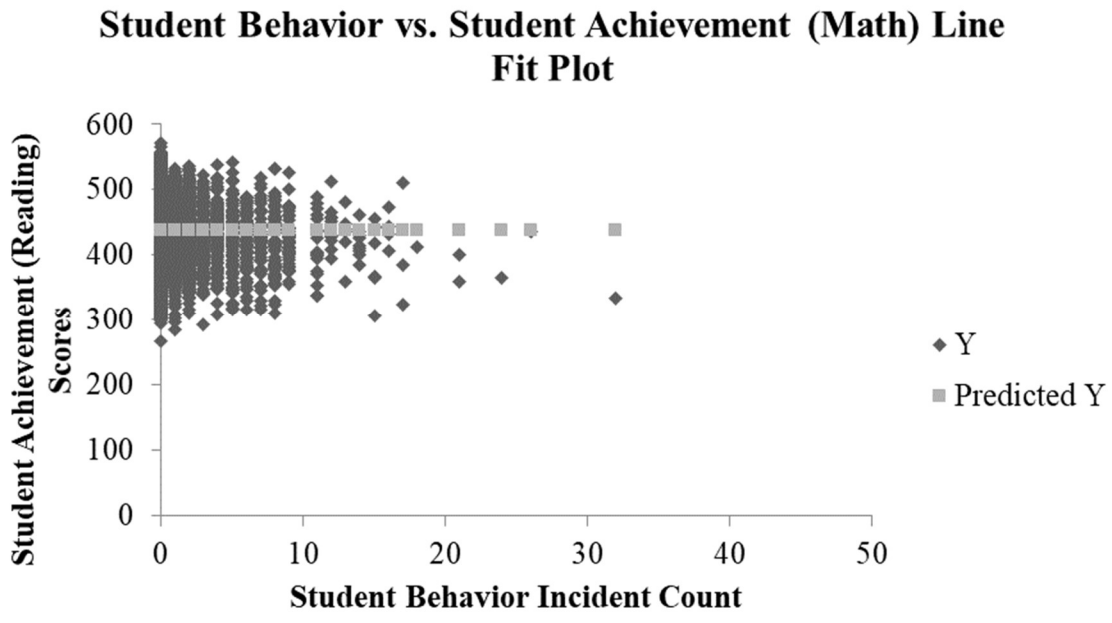


Figure 18. Student behavior vs. student achievement (math) line fit plot

Student Behavior versus Student Attendance

In Figure 19, the scatter plot displays the correlation between student behavior and student attendance. The data show a high degree of heteroscedasticity; meaning many outliers surround the line of best fit. The coefficient of correlation (r) reported as a result of the correlation test was 0.002 with a p -value equal to 2E-10. The results of the correlation test indicate a weak, but statistically significant relationship between student behavior and student attendance.

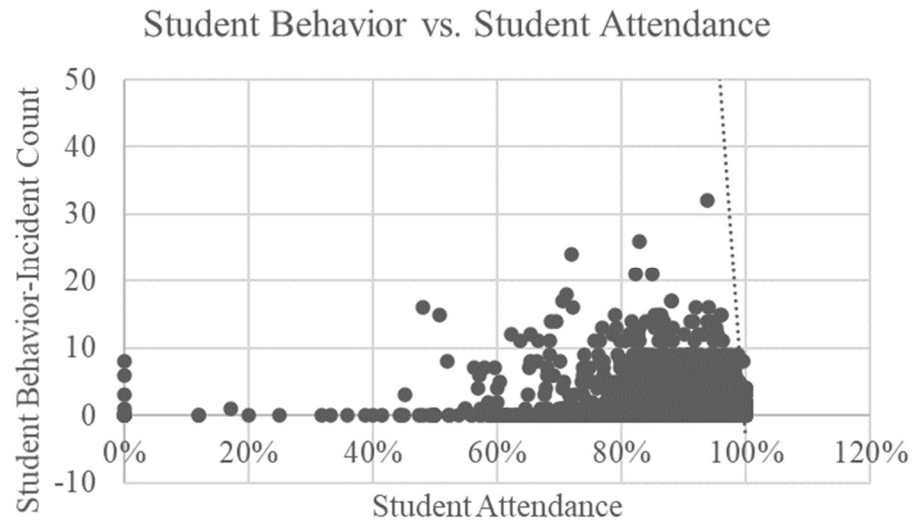


Figure 19. Student behavior vs. student attendance

Due to the aforementioned heteroscedasticity, a linear regression was conducted to analyze the relationship between student behavior student attendance further.

The regression results indicated a significant relationship between student behavior and student attendance. The results are statistically significant because critical values for p are less than 0.05. The linear regression output is shown in Tables 25 and 26.

Table 25

Summary of Regression Analysis (ANOVA)-Student Behavior vs. Student Attendance

ANOVA					
Source of Variation	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1E+08	1	1E+08	40.133	2E-10
Residual	6E+10	20466	3086644		
Total	6E+10	20467			

Table 26

Summary of Regression Analysis- Student Behavior vs. Student Attendance

Regression			
Regression Summary	<i>Coefficient</i>	<i>P-Value</i>	<i>Standard Error</i>
Intercept	1290.311	2E-11	192.866
X Variable	-1292.770	2E-10	204.064

Figure 20 displays the line of best fit between the two variables, student behavior and student attendance. Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Student Behavior} = 1290.311 * \text{Student Attendance} + -1292.770$$

Because there is a statistically significant dependent relationship between student behavior and student attendance, the above linear equation could be used to predict student attendance based on student behavior incident count. The linear equation

calculation results in higher student attendance when student behavior incident count is lower.

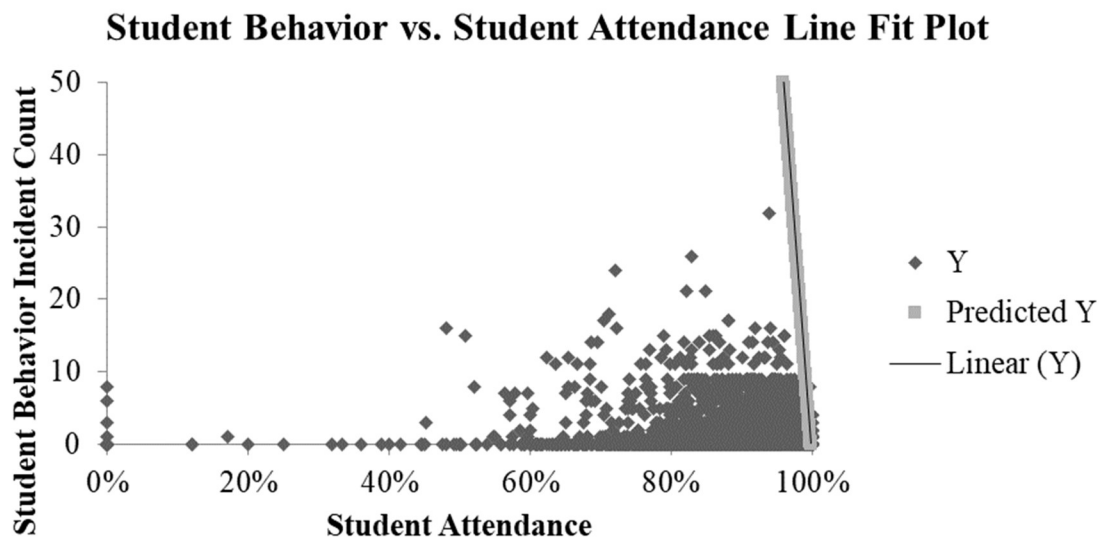


Figure 20. Student behavior vs. student attendance line fit plot.

Research Question Five

What is the relationship, if any, between classroom teacher attendance and student success?

For school years 2017-2018 and 2018-2019, 10,444 and 10,024 students' achievement, behavior, and attendance information were eligible for analysis. The fifth research question was analyzed by conducting a correlation test and regression analysis. The correlation statistic was used to determine the co-movement of two variables (Holmes, Illowsky, & Dean, 2018). Linear regression was used when testing the dependence of "one variable on one or more variables" (Holmes, Illowsky, & Dean, 2018, p. 558).

For the correlation and regression tests, the data were organized into groups and student success factors were calculated based on the criteria displayed in Table 27.

Table 27

Student Success Groupings and Subsequent Success Factors

Group	Attendance Criteria	Behavior Criteria	Reading Placement Criteria	Math Placement Criteria	Student Success Factor
A	>90%	0	On/Above Grade Level	On/Above Grade Level	3
B	≥85%, <90%	>0, ≤10	1 Grade Level Below	1 Grade Level Below	2
C	<85%	>10	2 Grade Levels Below	2 Grade Levels Below	1

The student success factor assignments for student attendance, behavior, and achievement in reading and math were added together to create a student index which was compared with classroom teacher attendance to determine the relationship between classroom teacher attendance and overall student success. Figure 21 contains a breakdown of student counts by the calculated customer index. A higher index value indicates higher degrees of student success in attendance, behavior, and achievement in reading and math.

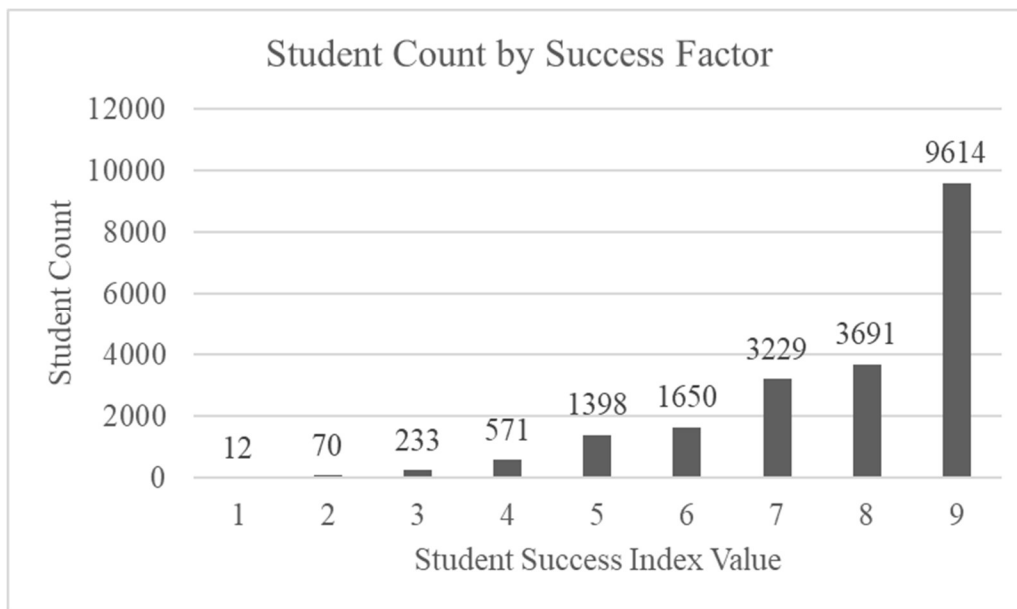


Figure 21. Student count by success factor.

The correlation coefficient result, when comparing student success and classroom teacher attendance, was $r = 0.001$, $p = 2E-06$. The test was conducted with a 95% confidence interval. The results are statistically significant because p is less than 0.05. The result indicates that there is not a strong linear relationship between student success and classroom teacher attendance. Figure 22 indicates that many outliers are surrounding the trendline (heteroscedasticity). Because of the heteroscedasticity, a linear regression was conducted to analyze the relationship between student behavior and reading scores further.

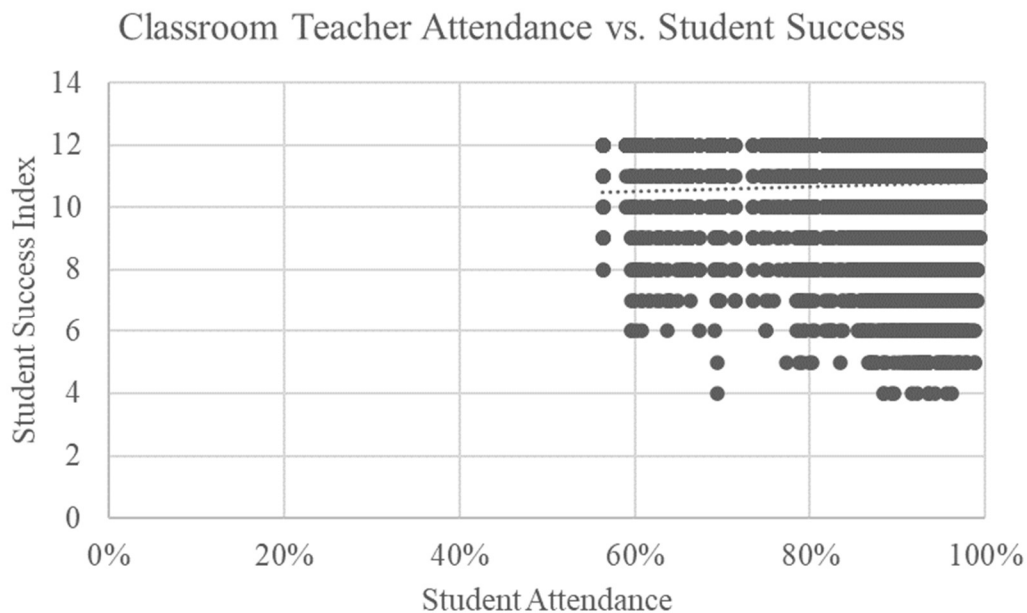


Figure 22. Classroom teacher attendance vs. student success scatter plot.

The regression results indicated a significant relationship between student success and classroom teacher attendance. The results are statistically significant because critical values for p are less than 0.05. The linear regression output is shown in Tables 28 and 29.

Table 28

Summary of Regression Analysis (ANOVA)-Student Success vs. Classroom Teacher Attendance

ANOVA					
Source of Variation	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	0.089	1	0.089	22.326	2E-06
Residual	85.519	20466	0.004		
Total	81.608	20467			

Table 29

Summary of Regression Analysis- Student Success vs. Classroom Teacher Attendance

Regression

Regression Summary	Coefficient	P-Value	Standard Error
Intercept	0.901	0.000	0.003
X Variable	0.001	2E-06	0.000

Figure 23 displays the line of best fit between the two variables student success and classroom teacher attendance. Based on the regression analysis, the linear equation is as follows:

$$y = mx + b$$

$$\text{Classroom Teacher Attendance} = 0.001 * \text{Student Success Index} + 0.901$$

Because there is a statistically significant dependent relationship between student success, as determined by the student success index, and classroom teacher attendance, the above linear equation can be used to predict student success based on classroom teacher attendance and vice versa. The linear equation calculation results in success indices when classroom teacher attendance is higher.

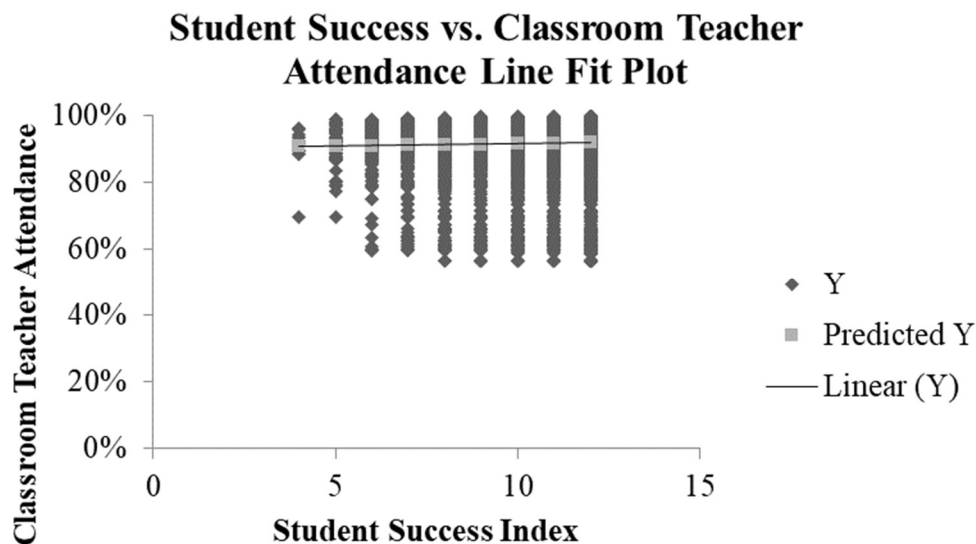


Figure 23. Student success vs. classroom teacher attendance line fit plot.

Summary

Data from 10,444 and 10,024 students were analyzed from school years 2017-2018 and 2018-2019 respectively. Results from the statistical analyses revealed no strong correlation when comparing student attendance and classroom teacher attendance, student behavior and classroom teacher attendance, student achievement (in both reading and math) and classroom teacher attendance, student attendance, behavior and achievement (in both reading and math), and student success and classroom teacher attendance. Correlation allows for the observation of a pair of variables' behavior (Holmes, Illowsky, & Dean, 2018). The statistical test is not an adequate method to assess a predictive model. After further examination, and the completion of linear regression analyses, statistically significant dependent relationships were observed between classroom teacher attendance and student attendance, student achievement (in

both reading and math) and student success overall. The statistically significant linear regression results lead to a strong model predicting student success based on classroom teacher attendance.

In Chapter Five, a summary of results from the data analysis is provided. In addition, the possibilities for alterations to this study are explored. Recommendations and applications of this study are also made to maximize student success.

Chapter Five: Summary and Conclusions

In this chapter, the main components of the study are reviewed. The major elements are also connected to the problem addressed in Chapter One; which was the fact that based on the lack of solid research in the field, there is a need to further understand the connection between classroom teacher attendance and student success as defined by this study. The research findings identified in Chapter Four are discussed and conclusions are applied to current literature. To conclude, recommendations and suggestions for both best practice and future studies are presented.

Review of the Study

In the social cognitive learning theory, Bandura (1989) emphasized the importance of behavioral, environmental, and individual factors in the learning process. Understanding the interaction between the aforesaid factors is key to knowing how learning occurs (Bandura, 1989). Bandura (1989) also highlighted observational learning which suggested that learning occurs through social modeling (Nolen, 2020). Classroom teachers play a role in fostering the development of behavioral, environmental, and individual learning influences, and also serve as an observational model in the learning process (Parrish, 2018).

Bandura (1978) suggested that environmental influences played a role in cognition. Student-centered environments tend to result in higher degrees of student success in achievement, behavior, and attendance (Freiberg, 2013). Classroom teachers are responsible for creating optimal learning environments (Hattie, 2012). Successful creation of such an environment requires the classroom teacher to be consistently present; otherwise, students may not experience the same successful outcomes (Combs, 2017).

Student-centered environments are rooted in inter-personal relationships that foster growth, responsibility, and self-regulation in students (Zuconi, 2016). Hattie stated that teacher-student relationships have a significant impact on student achievement (Visible Learning Plus, 2017). Strong teacher-student relationships promote student engagement and motivation which lend themselves to higher degrees of student success (Waterford.org, 2019). Highly effective, experienced, and consistent classroom teachers are more likely to develop relationships with students than their inexperienced counterparts (Hattie, 2012). Because of their ability to more effectively connect with students, experienced teachers are more likely to succeed in creating an optimal learning environment and, therefore, student success (Frieberg, 2013).

Bandura (1989) alluded to the fact that behavior can affect the environment. Behavior that results in a disruption in the classroom interferes with the classroom teacher's ability to deliver instruction; therefore, negatively impacting student success. (Ministry of Education, Guyana, 2015). Behavior that is considered disruptive can damage the quality of the classroom environment (Ministry of Education, Guyana, 2015).

Classroom teachers can foster the development of self-regulation behaviors in students which often have desirable results (Gafoor & Kurukkan, 2016). Self-regulation is taught through behavioral modeling (Parrish, 2018). Through modeling, classroom teachers can effectively develop social skills and proper classroom behaviors in students (Cherry, 2019). Educators who can teach self-regulation often create more desirable learning environments that positively impact student success (Jackson & Peck, 2015). However, if classroom teachers are inconsistently present, attentive observation of the teacher may not occur. Therefore, the opportunity for fostering self-regulation behaviors

in students and cultivating optimal learning environments may be diminished (Cherry, 2019).

Individual factors related to both the classroom teacher and his or her students influence the learning process (Harinie et al., 2017). Individual traits such as gender and age are important, but not necessarily unique to every student (McCormick et al., 2015). Self-efficacy, personality, perception, and general cognitive ability, however, have an impact on student success (Demenech-Betoret et al., 2017).

Self-efficacy is a strong predictor of student success (Demenech-Betoret et al., 2017). Self-efficacious students are developed as a product of classroom teachers' efforts to support and direct student efforts (Butcher & Pletcher, 2015). By helping children recognize their sense of self, classroom teachers impact students' beliefs about their ability to succeed (Cherry, 2020). Students will likely succeed at higher rates when exposed to a consistently present classroom teacher (Miller, 2017).

Personality traits also affect the learning process. Classroom teachers have a large role in the development of students' personalities (Arkansas State University, 2019). The aforesaid is significant as the proper development of students' personality traits is directly correlated with student success (Erfani & Mardan, 2017). Students are more likely to cultivate personality traits positively correlated with student success when in the presence of a constant classroom teacher (Miller, 2017).

Students' perception of their learning environment affects their overall success in terms of achievement, attendance, and behavior (Hazari, 2014). Positive perception often results in higher degrees of student success (Hazari, 2014). Environments are based on interpersonal relationships (Frieberg, 2013). Classroom teachers are tasked with creating

optimal environments (Frieberg, 2013). To connect with students and, consequently, learning environments that are perceived as open and safe, teachers must be in the classroom regularly (Miller, 2017).

Cognitive abilities affect learning and, therefore student success (Cox, 2020). Strong cognitive skills such as “concentration, memory, processing speed, logic, auditory perception, and visual processing” often result in higher degrees of student success (Cox 2020, para. 1–6). The strength of cognitive skills can be developed through training (du Plessis, 2015). Classroom teachers can use their professional abilities to enhance the learning process (du Plessis, 2015). By recognizing deeper learning, or lack thereof, classroom teachers can tailor lessons to students’ individual needs in a particular classroom environment based on their relationships with students (Hattie, 2012). Experienced classroom teachers are better able to impact student success through professional knowledge than inexperienced teachers who enter the classroom in their absence (Dogonay & Ozturk, 2011).

The purpose of this study was to determine the answers to four research questions about the relationship between classroom teacher attendance and student success factors as defined by this study. Furthermore, the purpose was to reiterate the relationship between student success factors themselves to determine the reciprocal nature of student attendance, student behavior, and student achievement. Student and teacher information was collected from a Midwestern school district and analyzed to answer the five research questions.

The first research question was asked to determine the relationship between classroom teacher attendance and student attendance. The second research question was

asked to understand the relationship between classroom teacher attendance and student behavior. The third research question was posed to ascertain whether or not there was a relationship between classroom teacher attendance and student achievement in both reading and math. The fourth research question was asked to determine the relationship between student success factors; student attendance, student behavior, and student learning. Finally, the fifth research question was asked to understand the overall relationship between classroom teacher attendance and student success.

The study took place in a Midwestern school district. Student and classroom teacher data were collected for school years 2017-2018 and 2018-2019. To be eligible for the study, students were required to have data points for attendance, behavior, and achievement in both reading and math. Students missing one or more data points were excluded from the study. 10,444 and 10,024 students were eligible for the study for 2017-2018 and 2018-2019 respectively.

Findings

Research question one. What is the relationship, if any, between classroom teacher attendance and student attendance?

After conducting a correlation test between classroom teacher attendance and student attendance, it was found that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p = 0.001$). Further analysis through linear regression showed a significant relationship between classroom teacher attendance and student attendance as indicated by less than 0.05 p -value. Linear regression revealed a dependence between classroom teacher attendance and student success. The linear

equation that resulted from this analysis could be used to project student attendance based on classroom teacher attendance because of the statistically significant results.

Research question two. What is the relationship, if any, between classroom teacher attendance and student behavior?

After conducting a correlation test between classroom teacher attendance and student behavior, it was found that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically insignificant due to the fact that p was greater than 0.05 ($p = 0.789$). Further analysis through linear regression showed an insignificant relationship between classroom teacher attendance and student behavior as indicated by a greater than 0.05 p -value. Linear regression revealed no dependence between classroom teacher attendance and student success. The linear equation that resulted from this analysis cannot be used to project student attendance based on classroom teacher attendance with any degree of confidence.

Research question three. What is the relationship, if any, between classroom teacher attendance and student achievement?

After conducting a correlation test between classroom teacher attendance and student achievement in reading, it was found that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p < 0.001$). Further analysis through linear regression showed a significant relationship between classroom teacher attendance and student achievement in reading as indicated by less than 0.05 p -value. Linear regression revealed a dependence between classroom teacher attendance and student achievement in reading. The linear equation that resulted from this analysis

could be used to project student achievement in reading based on classroom teacher attendance because of the statistically significant results.

For math, a correlation test between classroom teacher attendance and student achievement in math revealed that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p < 0.001$). Further analysis through linear regression showed a significant relationship between classroom teacher attendance and student achievement in math as indicated by less than 0.05 p -value. Linear regression revealed a dependence between classroom teacher attendance and student achievement in math. The linear equation that resulted from this analysis could be used to project student achievement in math based on classroom teacher attendance because of the statistically significant results.

Research question four. What is the relationship, if any, between student attendance, student behavior, and student learning?

A correlation test between student attendance and student achievement in reading revealed that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p < 0.001$). Further analysis through linear regression showed a significant relationship between student attendance and student achievement in reading as indicated by less than 0.05 p -value. Linear regression revealed a dependence between student attendance and student achievement in reading. The linear equation that resulted from this analysis can be used to project student achievement in reading based on student attendance because of the statistically significant results.

The same statistical tests (correlation and linear regression) were performed to determine the relationship between student attendance and student achievement in math. After conducting a correlation test between student attendance and student achievement in math, it was found that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p < 0.001$). Further analysis through linear regression showed a significant relationship between student attendance and student achievement in math as indicated by less than 0.05 p -value. Linear regression revealed a dependence between student attendance and student achievement in math. The linear equation that resulted from this analysis could be used to project student achievement in math based on student attendance because of the statistically significant results.

Correlation and linear regression analyses were used to determine the relationship between student behavior and student achievement as well. For reading, a correlation test between student behavior incidents and student achievement in reading revealed that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p = 0.015$). Further analysis through linear regression showed a statistically significant relationship between student behavior incidents and student achievement in reading as indicated by less than 0.05 p -value. Linear regression revealed a dependence between student behavior incidents and student achievement in reading. The linear equation that resulted from this analysis can be used to project student achievement in reading based on student behavior incidents because of the statistically significant results.

For math, a correlation test between student behavior incidents and student

achievement in math revealed that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p = 0.005$). Further analysis through linear regression showed a statistically significant relationship between student behavior incidents and student achievement in math as indicated by less than 0.05 p -value. Linear regression revealed a dependence between student behavior incidents and student achievement in math. The linear equation that resulted from this analysis can be used to project student achievement in math based on student behavior incidents because of the statistically significant results.

Finally, a correlation and linear regression tests were conducted to observe the relationship between student behavior and student attendance. After conducting a correlation test between student attendance and student behavior incidents, it was found that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p < 0.001$). Further analysis through linear regression showed a significant relationship between student attendance and student behavior incidents as indicated by less than 0.05 p -value. Linear regression revealed a dependence between student attendance and student behavior incidents. The linear equation that resulted from this analysis could be used to project student attendance based on student behavior incidents because of the statistically significant results.

Research question five. What is the relationship, if any, between classroom teacher attendance and student success?

As a review, to determine the relationship between classroom teacher attendance

and overall student success, the data were organized into three groups based on the attendance, behavior, and achievement criteria shown in Table 30.

Table 30

Student Success Groupings and Subsequent Success Factors

Group	Attendance Criteria	Behavior Criteria	Reading Placement Criteria	Math Placement Criteria	Student Success Factor
A	>90%	0	On/Above Grade Level	On/Above Grade Level	3
B	≥85%, <90%	>0, ≤10	1 Grade Level Below	1 Grade Level Below	2
C	<85%	>10	2 Grade Levels Below	2 Grade Levels Below	1

The student success factors were then summed for each student to create a student index that was then used to compare with classroom teacher attendance.

After conducting a correlation test between student success and classroom teacher attendance, it was found that no strong relationship existed between the two factors. This result was based on a 95% confidence interval and was deemed statistically significant due to the fact that p was less than 0.05 ($p < 0.001$). Further analysis through linear regression showed a significant relationship between student success and classroom teacher attendance as indicated by less than 0.05 p -value. Linear regression revealed a dependence between student success and classroom teacher attendance. The linear equation that resulted from this analysis could be used to project student success indices

based on classroom teacher attendance because of the statistically significant results.

Conclusions

The purpose of this study was to determine whether there is a relationship between classroom teacher attendance and student success. Frieberg (2013) stated that positive student outcomes are a result of optimal learning environments. The environment affects student achievement rates, student attendance rates, and student behavior (Elias, 2019; Frieberg, 2013; Kapur, 2018). The creation of such an environment is the responsibility of the teacher (Hattie, 2012). In order to cultivate student-centered, ideal learning environments that support student success, classroom teachers must be consistently present (Combs, 2017). The results of this study support Combs' claim.

The outcomes of this study revealed that classroom teacher attendance plays a predictive role in student attendance and achievement in both reading and math. However, the outcomes did not result in a predictive relationship between classroom teacher attendance and student behavior. A number of factors could have contributed to the absence of a predictive relationship; more data may be needed to ascertain whether or not a significant relationship exists between the two variables.

Ultimately, results from the study indicated that classroom teacher attendance plays a role in student success. By reviewing the outcomes of this study, leaders can derive an understanding of the positive relationship that exists between classroom teacher attendance and student success. The findings presented as a result of this study may be valuable in the future as leaders develop strategies to both equip modern-day classroom teachers and effectively serve students.

Implications for Practice

The findings of this study showed a statistically significant relationship between classroom teacher attendance and student success. The results of this study reiterate the importance of the classroom teacher in student success. In the absence of the classroom teacher, there appear to be lower rates of success among students.

Bandura emphasized the importance of behavioral, environmental, and individual factors in the learning process in the social cognitive learning theory (Harinie et al., 2017). Behavioral, environmental, and individual factors interact to influence learning (Bandura, 1978). Additionally, Bandura (1989) identified observation as the main mode of learning. Students observe modeled behavior in their environment and begin to imitate those behaviors (Bandura, 1989). As students learn, the learned behavior tends to cognitively manifest at the individual level (Harinie et al., 2017).

Given the reliance of each learning factor on another and the dependence of each learning factor on observation, classroom teachers must be consistently present (Cherry, 2019). Classroom teachers influence individual factors and behavioral factors which in turn influence the environment that they are directly responsible for cultivating (Bandura, 1989; Hattie, 2012). An optimal learning environment results in higher degrees of student success (Frieberg, 2013). Classroom teachers are better able to create positive learning environments if they are consistently present; otherwise, students likely will not achieve the same level of success (Combs, 2017).

While there was a lack of solid research regarding the connection between classroom teacher attendance and student success, the results of this study appear to align with past research indicating the importance of the classroom teacher (Miller, 2017). As

previously stated, the results of this study indicate statistical significance when observing the relationship between classroom teacher attendance and student success. The relationship is positive meaning that higher classroom teacher attendance rates result in higher degrees of student success.

The goal of education is to adequately prepare students to live and interact in an ever-changing world (Zhao, 2015). Based on the results of this study, the classroom teacher's consistent presence is needed to support students' success. Practitioners and leaders at the local and state level who review this study may be inspired to design better professional development schedules, benefits packages, and absence management systems with the importance of classroom teacher presence to student success in mind. Just as a shift from an employee-oriented paradigm to a student-centered paradigm was necessary, so too is a shift in the way educators approach professional development for teachers (Darling-Hammond, Hyler, Gardner & Espinoza, 2017). To better support the continuous learning of classroom teachers and the ultimate success of students, administrators at state and local levels could redesign school schedules and or provide funding for educator learning opportunities outside the regular school day (Darling-Hammond et al., 2017). Districts could also take advantage of technology and train-the-teacher models (Frontline Education, 2020).

Based on the results of this study, districts could re-evaluate their policies surrounding absence management and benefits packages. It is clear that teachers need to be in the presence of their students as much as possible to support the success of students (Frontline Education, 2020). To ensure consistent attendance on the part of teachers, the adoption of incentivization policies that reward classroom teachers for consistent

attendance could be an option (Attendance Works, 2018b). According to Frontline Education (2020), absence management policies promoting increased classroom teacher attendance might include:

- Cash-out options
- Cash bonus or other reward packages
- Include classroom teacher absence rates in annual employee review processes

Based on the results of this study, districts that adopt absence management policies to promote high rates of classroom teacher attendance will realize higher degrees of student success.

Recommendations for Future Research

According to Frontline Education (2019), absenteeism, overall, is unavoidable. However, based on the results of this study, high degrees of classroom teacher absenteeism negatively impacts student success. The outcomes of this study prompted additional questions. The recommendations for future research include investigating absence reasons using both qualitative and quantitative components, extending the timeframe of the study, and extending the grade level span to include students kindergarten through fifth grade and beyond.

Investigating classroom teacher absence reasons—qualitative and quantitative. This study was limited to the use of quantitative data to determine the relationship between classroom teacher attendance and student success. Also, the study only included the rate of classroom attendance as an independent variable. Future researchers could expand on the quantitative data set by investigating absence reasons. Comparing student success factors with classroom teacher absence reasons might refine

the results of the study and allow local and state leaders to fine-tune policies that better support student success.

A qualitative component might also prove to be valuable when evaluating classroom teacher absenteeism. The analysis of qualitative data collected from classroom teachers could inform districts of cultural issues (Frontline Education, 2020). Therefore, leaders could use qualitative data as a complement to quantitative data to identify the root cause of classroom teacher absenteeism and work to remedy the issue and better support student success.

Extending the timeframe of the study. The timeframe for this study was limited to two years (2017-2018 and 2018-2019). While this timeframe served as a strong baseline, the limitation to only two years may not have been extensive enough to determine conclusive relationships between classroom teacher attendance and student success. Future researchers should consider extending the timeframe to three or more years.

Extending the grade-level span. One of the limitations of this study was the focus on students in kindergarten through fifth grade. Future researchers may consider expanding the focus beyond elementary grade levels into secondary grade levels. A broader sample may enable researchers to observe differences between elementary grade levels and secondary grade levels as they relate to the impact of classroom teacher attendance on student success.

Summary

Teachers play a critical role in student success (Strong, 2018). The role of the teacher has evolved throughout history from one preparing students for an industrialized workforce to one equipping students to live and work in an ever-changing, globalized world (Zhao, 2015). Modern-day teachers are tasked with instilling 21st century competencies such as critical thinking, communication, creativity etc. so that students are better able to “meet future challenges” and “achieve their full potential” (Pellegrino, 2014, p. xvii).

In the Social Cognitive Learning Theory, Bandura (1989) highlighted the importance of environmental, behavioral, and individual factors in the learning process. Bandura (1989) also emphasized observational learning. All of the aforementioned factors interact and are also influenced by observation (Harinie et al., 2017). By serving as a model, teachers influence behavioral and individual factors which, in turn, influence environmental learning factors (Harinie et al., 2017). Desirable learning environments promote higher-level learning (Poole & Evertson, 2013). Given the critical role of the educator in creating an environment conducive to student success, it stands to reason that students who consistently experience high-quality teachers or teaching strategies would achieve higher degrees of success (Freiberg, 2013). In the absence of the classroom teacher, however, students may not experience the same successful outcomes (Combs, 2017).

In Chapter Two, a review of the literature connected the role of the teacher to environmental factors, behavioral factors, and individual factors that directly affect learning processes (Bandura, 1989). Chapter Three contained an overview of the

construct of the study and the study's methodology. The study was conducted to observe the relationship between classroom teacher attendance and student success in the areas of achievement, attendance, and behavior. Chapter Four highlighted findings and answers to the five research questions. Ultimately, statistically significant dependence was revealed when analyzing the relationship between classroom teacher attendance and student success.

State and local educational agencies could utilize the findings of this study to refine necessary professional development for classroom teachers. In addition, the results of this research could impact policy development in implementation concerning absence management and/or benefits packages for district employees. Considerations for future research in this study's arena could assist educational leaders in refining their approach to supporting student success. While there is a multitude of factors that influence student success, the results of this study are noteworthy and it is important for leaders to consider the impact of the teacher, and effectively use policy and resources to both support classroom teachers and promote student success.

Appendix A

Institutional Review Board Approval

Apr 15, 2020 11:09 AM CDT

RE:

IRB-20-166: Initial - A Study to Determine the Relationship Between Classroom Teacher Attendance and Student Success

Dear Meagan Stanley,

The study, A Study to Determine the Relationship Between Classroom Teacher Attendance and Student Success, has been Approved as Exempt.

Category: Category 1. Research, conducted in established or commonly accepted educational settings that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

The submission was approved on April 15, 2020.

Here are the findings:

IRB Discussion

This research entails analysis of secondary data provided by the applicable school district, from which the PI has obtained requisite authorization. These data will be deidentified, thus satisfying FERPA conditions for use of education records for research purposes and the minimization of risks associated with these data.

Regulatory Determinations

This study has been determined to be minimal risk because the research is not obtaining data considered sensitive information or performing interventions posing harm greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

Sincerely,

Lindenwood University ([lindenwood](http://www.lindenwood.edu)) Institutional Review Board

Appendix B

Permission to Conduct Research-District



*Engaging. Relevant. Personal.
Every Learner – Every Day*

To: Meagan Stanley
From: [REDACTED]
Date: February 19, 2019
Subject: Request to Conduct Research

Your request to conduct research proposal titled, Primary Teacher Attendance vs. Student Success: A Study to Determine the Existence of a Direct Relationship, submitted for consideration has been approved.

Feel free to contact [REDACTED] if you have questions or need additional information.

[REDACTED]
Springfield Public Schools

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Vita

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Meagan managed laboratory operations at local water laboratories in Springfield Missouri before transitioning her career path and becoming a Data Specialist for Springfield Public Schools in Springfield, Missouri in 2014. She served in that role for one year before transitioning into the role of Supervisor of Analytics. In that position, Meagan built and developed the Springfield Public School's data warehouse that aligned with the district's initiative to promote data literacy for leaders. Meagan joined City Utilities of Springfield, Missouri in 2019. In her current position, she has the opportunity to develop data-literate leaders and promote continuous learning to better serve the community.