THE EFFECT OF TRUANCY ON TNREADY MATH AND ENGLISH/LANGUAGE ARTS ACHIEVEMENT SCORES

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Abstract

Limited research is available on the impact short-term truancy has on academic achievement. This quantitative, non-experimental study was conducted within a southeastern Appalachian school district. The study focused on students in grades 3-8, during the years 2016-2018, and examined the difference in TNReady mathematics and English/language arts achievement scores between students who were truant in 2016-17, but not truant in 2017-18, and those who were not truant in either year. Attendance reports for 2016-2018 were collected from the attendance software, Edupoint. TNReady mathematics and English/language arts scale scores were compiled the TNReady test administered in the 2017-18 school year. A one-way multivariate analysis was conducted to determine the statistical significance. The study revealed that there was not a significant difference between students who were truant in 2016-17, but not truant in 2017-18, and those who were not truant in either year. The information gained from this study will help school districts to identify methods of improving student achievement, while increasing attendance.
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Dedication

This dissertation is dedicated to my family…

To my husband, Paul, and my children, Jacob, Karli, and Emma Grace, your faith, love and support has been invaluable. Thank you for understanding all of the late nights, missed activities, and stressful days that have led to this day. I cannot wait to see where your own educational journeys lead you. I love you more than you will ever know.

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CHAPTER I: INTRODUCTION AND BACKGROUND OF THE STUDY

As early as the 1852, when Massachusetts introduced a compulsory education and mandatory attendance law, schools have struggled to enforce and maintain compliance (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935). Due to the evolution of that law, students ages 6-16, are required to attend school (TCA 49-6-3007). Parents and students who do not adhere to those mandates face various consequences depending on the number of offenses and the state in which the student resides (Passow, 1977). In an effort to hold school districts more accountable for student attendance, President Obama signed into law the Every Student Succeeds Act (ESSA). Among other requirements, ESSA mandates that schools actively track student absences (Every Student Succeeds Act, n.d).

An important distinction separates those who are considered truant and those who are chronically absent. A person who is truant is defined as someone who is absent from school without official permission (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935). However, not all absences meet those standards. Students who miss due to medical appointments, suspensions, for pre-arranged trips, parent notes, as well as unexcused absences, can fall into a different classification (Balfanz, 2016). A student who has missed 10% or more of the school year is categorized as chronically absent (Chang & Romero, 2008). According to Chang & Romero (2008), in the traditional school enrollment period, approximately 180 days, a student would only need to miss 18 days, as little as 2 days a month, to be labeled as chronically absent. Since attendance is directly tied to funding, schools are actively searching for programs to reverse the trend (Tennessee Department of Education, 2018c).
Similar to truancy, chronic absenteeism is a result of the following factors: family mobility, single parent home, mental health issues, unemployment, poverty, and a lack of understanding regarding school policies and procedures (Mallet, 2016; Passow, 1977; Sugrue, Zuel, & LaLiberte, 2016). Those factors led to lower student achievement, higher drop-out rates (Surgue, Zuel, & LaLiberte, 2016), increased instances of drug abuse, physical abuse, delinquency, and suicide attempts (Kearney & Graxzyk, 2014). In addition to acknowledging the factors and results leading to chronic absenteeism, proactively addressing those factors have become paramount to long-term student success (Hancock, Lawrence, Shepherd, Mitrou, & Zubrick, 2017).

**Statement of the Problem**

Multiple studies have shown that students who are chronically absent often exhibit low academic achievement scores (Easton & Englehard, 1982). However, there is minimal research concerning the immediate effect of truancy on academic achievement when truant behavior is corrected in the following school year. This study examined the significance of one year of truant behavior on the following academic school year’s mathematics and English/language arts achievement data.

**Purpose of the Study**

The purpose of this quantitative study was to analyze the effects of short-term truancy on TN Ready Mathematics assessment achievement scores the following school year. Research indicates that chronic absenteeism negatively impacts achievement scores (Caldas, 1993; Easton & Englehard, 1982; Roby, 2004). This research study is focused specifically on the impact one truant year has on the following school year. A greater understanding of how one year of
truancy can impact student achievement will lead to more knowledgeable attendance monitoring and intervention practices.

**Theoretical Framework**

Robert Merton’s Structural Strain Theory (Flynn, 2013; Merton 1938; Merton 1968) and B.F. Skinner’s Operant Conditioning Theory (Skinner, 1953) were utilized as the basis for this study’s theoretical framework. These studies highlight the relationship between behavior, society’s expectations, reinforcements, and consequences. Each factor plays a role in how truancy and academic achievement goals affect the student population.

Heavily influenced by Emile Durkheim’s anomie theory, Robert Merton developed the structural strain theory in the 1930s (Flynn, 2013). Structural Strain Theory suggests that an individual’s involvement in deviant behavior is due to imposed societal pressures (Flynn, 2013, Merton 1938). Federal and State governments have dictated that students must attend school for a specific number of days through a determined number of years (Mallett, 2016). According to this theory, truant students are only engaging in deviant behavior because of the societal laws that mandate attendance. Without those laws in place, students would be free to attend school as deemed necessary by themselves, their parents, or their guardians.

Merton included five adaptation methods employed by individuals to navigate society’s strictures: conformity, ritualism, retreatism, innovation, and rebellion (Flynn, 2013; Merton 1938; Merton 1968). These adaptations provide the means necessary to deal with traditionally valued goals using non-traditional methods. The deviant act of truancy allows for an explanation of each adaptation. Students are expected to attend school a specific number of days each school year. In this case, compulsory attendance is the valued goal. Conformity occurs when students remain within the attendance guidelines imposed by the school district. Ritualism is exhibited
when the student attended school, but then refused to actively participate in the day’s educational experiences. A student that utilized retreatism simply stopped going to school at all. Innovation could occur if a student found an alternative way to circumvent the attendance requirement, such as using forged doctor or parent notes to excuse the absences. The rebellion adaptation may manifest itself in multiple formats. For example, the student can refuse to go to school as a demonstration against perceived educational injustices, or parents or guardians give explicit permission for the student to refrain from attending school due to their own prejudices, ideas or experiences (Merton 1938, Merton 1968; Wagner, Dunkake, & Weiss, 2004).

Operant conditioning, developed by B.F. Skinner (1953), suggests that behaviors can be conditioned due to the received response. Influenced by Thorndike’s 1989 law of effect, Skinner focused on two types of behaviors: respondent and operant. Automatic actions, such as blinking to get sand out of your eye, is considered respondent. Operant behaviors, however, are intentional or conscious actions.

Skinner concentrated his study on how reinforcers and punishments effect those operant behaviors. When an individual receives a reinforcer, either positive or negative, in response to an action, the behavior will likely be repeated. Conversely, if the individual is given a positive or negative consequence in response to an action, the behavior is likely to not be repeated (Skinner, 1953). Used in this study, school attendance is the operant behavior. A student who regularly attends school has an increased exposure to material, resulting in obtaining a proficient score on a state assessment. In that situation, the proficient score would be a reinforcer. Similarly, a student who due to truant behaviors, might experience punishers, such as grade level retention or being unable to participate in after school events. The desired effect from the punishers would be for students to refrain from accumulating future absences.
**Research Questions**

The study will address the following research questions:

1. Is there a significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year, and those students who were not truant in either year?

2. Is there a significant difference between the TN Ready English/Language Arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year, and those students who were not truant in either year?

**Hypotheses**

**H_{a1}:** There is a significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year.

**H_{a2}:** There is a significant difference between the TN Ready English/Language Arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year.

**Null Hypotheses**

**H_{o1}:** There is no significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 and those students who were not truant in either year.

**H_{o2}:** There is no significant difference between the TN Ready English/Language Arts achievement scores of students who were truant in the 2016-2017 school year and those students who were not truant in either year.
**Delimitations**

This study is delimited to an East Tennessee district public school system with six schools serving students in grades 3-8. The results of this study may be generalized to school districts with similar demographics.

**Limitations**

Sample size is a limitation of this study. A larger sampling would allow for covariates such as race, gender, disabilities, and SES. Also, the sample size limits the generalizations to a larger geographical area. Additionally, inconsistent attendance recording practices among educators and school attendance officers, as well as general human error could impact the data sets. Attendance history of students is also a limitation. Some participants could have a long history of truancy, while it might be a recent condition for others. Furthermore, it is possible that students did not take the TN Ready Mathematics and English/Language Arts assessments seriously, resulting in skewed assessment scores.

**Assumptions and Definition of Terms**

**Assumptions**

The researcher assumed that all attendance recording practices were completed within the parameters identified by the state of Tennessee and the research district. The researcher also assumed that all students had performed to the best of their ability on the TN Ready Mathematics and English/Language Arts assessment.

**Definition of Terms**

**Chronic Absenteeism:** A student who has missed 10% or more of the school year is considered chronically absent. These absences accumulate throughout the academic year and includes both excused and unexcused events (Belfanz, 2016).
**Truant:** A student who is truant is defined as someone who is absent from school without official permission (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935).

**TNReady achievement assessment:** TNReady is a part of the Tennessee Comprehensive Assessment Program (TCAP) and was designed to assess true student understanding, not just basic memorization and test-taking skills (Tennessee Department of Education, 2018c).

**Adequate Yearly Progress (AYP):** A school’s AYP consisted of students’ state standardized test scores, state standardized test student participation numbers, and one additional indicator chosen by the school or district. These targets were mandated for all students, including those with disabilities, low socio-economic status, limited English proficiency, and ethnicity groups (Thomas & Brian, 2011).

**Tennessee Compulsory Attendance Law T.C.A. § 49-6-3007:** requires all Tennessee children, ages 6-17, to attend school each day. The law gives school districts authority to set requirements related to student attendance (T.C.A. § 49-6-3007).

### Organization of the Document

This study is organized into five chapters. The first chapter establishes the background and purpose of the study. This includes an overview of the topic, the specified research problem, the study’s purpose, the theoretical framework, hypotheses, and with delimitations and limitations. The second chapter includes a review of literature focused on a historical perspective of truancy and student achievement, the evolution of attendance laws and their impact, as well as an overview of the TNReady assessment strictures and proficiency requirements. The third chapter presents the investigated sample population, the study’s data collection methodology, and the procedures used to gather and analyze the data. The fourth
chapter is comprised of data analysis. The fifth chapter contains a research summary, implications of the study, and recommendations for future research.
CHAPTER II: REVIEW OF RELATED LITERATURE

Introduction

Chapter Two is a comprehensive review of literature that promotes the evaluation of the effect of truancy on TNReady achievement and teacher-student relationships. The chapter includes a historical overview of compulsory attendance, opposition, the connection between academic achievement and compulsory attendance, laws, accountability measures and academic achievement, the relationship between truancy and middle school, an overview of standardized testing, a review of high-stakes testing in Tennessee, compulsory attendance in Tennessee, and a review of the relationship between truancy perceptions and teacher-student interactions as specified in literature. This research provides a framework for the relevance of this study’s focus on truancy’s impact on student achievement and teacher-student relationships.

History of Compulsory Attendance

The Protestant Reformation was catalyst for educational change. Before this period, wealthy children received private instruction through tutors, parents, or religious groups. In the early 1500s, Martin Luther began advocating for a shift from private to public schools, as well as for compulsory attendance (Rothbard, 1974). Reformers advocated to educate the masses, male and female, on Protestant religious views and ideology. According to Luther, the greater the education, the greater the service ability for God. Parents were responsible for ensuring that their children were receiving religious instruction both at home and at a public school. The goal for education was not only to ensure students’ ability to read and write, but to instill obedience to parents, the government, and the church (Androne, 2014).

Luther proposed that an educated population was a successful society. Equating the lack of proper education and religious instruction with neglect, he focused on society’s
responsibilities and roles in meeting those essential needs. Furthermore, Luther acknowledged the upfront cost of providing a free public education, as well as the investment of time and effort involved in the endeavor. However, Luther justified the cost, stating that if people were well versed in economic and religious facets, they would be useful stewards for current and future generations (Androne, 2014; McGoldrick, 2010).

Luther’s educational influence was felt both in Germany and abroad. The Duke of Wurttemberg, influenced by Luther’s work on compulsory attendance, required that schools maintain detailed records and fined those who were deemed truant (Rothbard, 1974). In Zurich, Huldrych Zwingli, another early education reformer, proposed that an education well versed in languages, science, mathematics, and religion would enable people to become more sincere Christians. Along with academics, Zwingli concentrated on the importance of physical education and health in relation to how they affected the student’s Christian mission (Androne, 2014.)

Similar to Luther, John Calvin believed that in educating the masses, the Church could maintain control and indoctrinate a larger number (Rothbard, 1974). In 1536, the General Council mandated compulsory attendance for elementary education. However, the opportunities to attend an adequate school were limited (Watt, 2002). Accordingly, Calvin established both primary and secondary schools in Geneva (McGoldrick, 2010). In 1553, Calvinistic missionaries dispersed into France, a predominately Catholic nation. Calvinism quickly spread and by 1561 there were approximately one million believers. By the early 17th century, Protestant missionaries brought their religious ideology and educational beliefs to Holland and Germany (Rothbard, 1974).
Prussian King Frederick William I is credited with launching compulsory attendance in the Prussian school system. His militant style of education was further promoted by his son, Frederick the Great. In 1763, Frederick the Great, a Calvinist, continued educational reform by requiring compulsory attendance for children ages 5-14. Then, under the rule of Prussian King Frederick William III, education reform continued with government-controlled schools, state exams, teacher certification, and a school supervisory system. By 1834, all Civil Service candidates and university scholars were required to pass the state-mandated high-school graduation examinations (Rothbard, 1999).

The effects of the Protestant Reformation led to the subsequent education reform in the American colonies. In an effort to increase participation in the Calvinist public education, the Massachusetts Bay Puritans passed a compulsory literary act in 1642. This law mandated that all children must receive an education while maintaining parental responsibility for providing appropriate instruction. However, if deemed necessary, the state could create its own schools and curriculum (Passow, 1977; Rothbard, 1974).

The Old Deluder Satan Act of 1647 established parameters for public schools in towns and cities in Massachusetts. This law required that towns with 50 or more households employ one resident to teach all children how to read and write. Payment for the teaching position came from the parents, guardians, and/or townspeople. When the population reached 100 households, a grammar school was then mandatory. If a town was found to be in violation of the law, the town would be fined (Hazlet, 2011).

Massachusetts made legal history again when passing the first compulsory attendance law. Unlike the previous attempt at mandating attendance for religious purposes, the law was in response to the increasing prevalence of child labor (Deffenbaugh, Keesecker, & United States
Department of the Interior, 1935; Gleich-Bope, 2014; Passow 1977). In 1852, The Massachusetts School Attendance Act, amended in 1859, outlined student age requirements and truancy penalties. According to the Act, local public school attendance was required of children ages 8-14. The student was mandated to attend six consecutive weeks of school for every 12 weeks in residence in the town or city. For each truancy violation, the parent/guardian was required to pay the town up to $20. However, the fine would be waived if the child did not attend due to poverty, previous exposure to the curriculum, physical disabilities, and mental disabilities. Additionally, the act required truant officers and school committee members to investigate all attendance violations and enforce fines. If they were found to be negligent in their duties, the truant officers and committee members would be charged a $20 fine. (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935).

Education concerns surfaced again after the 1890’s release of *The Report of the Committee of Ten*. The report focused on effective school organization designed to meet the needs of the nation’s youth (Mackenzie, 1894; Passow, 1977). The recommendations were a result of comparisons made between educational systems in European countries and the United States. The committee suggested that high school should begin at age 11, giving students an extra two years to master advanced subjects. Along with an extended high-school career, students would be able to choose from two paths: trade or collegiate. Since many students did not attend past the compulsory age requirement, the most applicable courses were those dealing with language, history, mathematics, and science. Also mentioned was the need to ensure that teachers are appropriately trained and therefore qualified for their positions (Mackenzie, 1894). The report highlighted desperate need for a more structured and diligent education implementation strategy (Passow, 1977).
Compulsory attendance laws continued to gain popularity, and by 1918, every state had a truancy law in place. However, the laws were not strictly enforced and did not address the root causes of truancy (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935; Gleich-Bope, 2014; Stadum, 1995). The popularity of child labor became increasingly detrimental to maintaining school attendance. Though children had worked on family farms throughout history, in Colonial America, youth participated in apprenticeship programs to learn a trade and make a living wage. The dynamics of child labor began to change during the Industrial Revolution. Children, as young as 8 years old, were considered perfect candidates for factory work. In the 1820s, at least 40% of mill workers were children. By 1910, at least 18% of 10-15 year olds were employed. Street trades, mines, factories, and cotton mills were among the largest child employers (Schulman, 2014).

In 1938, the Fair Labor Standards Act (FLSA) 29 U.S.C. 201-219, assigned restrictions for employing children. Minimum age specifications were outlined for those working during school, as well as after school. Also, jobs deemed dangerous were also limited in their hiring practices. For example, children ages 16 and above were eligible to work during school hours, while those employed after school could be 14 years old. Only those 18 years or older were eligible for potentially harmful positions. The number of working hours and wages were also arranged (The Fair Labor Standards Act of 1938, 2011).

This child labor reform movement slowly changed the workforce. As youth were now required to meet an age minimum or a predetermined proficiency level, enforcement responsibility fell to the employers. Inspectors and officers policed factories to ensure compliance. The movement’s effectiveness was widespread. New York was one such example. From 1920 to 1935, child labor exemptions were reduced from 75,000 to 5,500 (Steffes, 2012).
Initially, students were required to attend school starting at some point between ages 7-9 (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935) and were exempt at age 14 (Stadum, 1995). The school calendar also varied from state to state ranging in length from three months to nine months. Exemptions to the compulsory attendance requirements were as diverse from state to state as the required age ranges and calendar years. Exceptions could be made due to the completion of specified grade levels, a student’s travel distance, religious observances, the number of children in the home, physical or mental disabilities, poverty, and/or the issuance of a work permit. (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935; Stadum, 1995). Truancy penalties were diverse among the cities, towns, and States.

Attendance officers were tasked with monitoring and enforcing compulsory attendance. Originally working-class males, the officers would conduct periodic home visits, maintain data reports, and levy fines against offenders (Sheldon, 2007). Those found negligent of their duties faced fines, loss of job, and/or jail time dependent upon the state. Additionally, administrators and educators could also face fines for failure to report absences. However, the lack of universal truancy definitions, reporting procedures, and response periods made enforcement and monitoring difficult (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935; Department of the Interior, 1914).

Despite the obstacles, the 1946 United States Census showed an increase in student enrollment compared to the 1940 Census. This growth was attributed to the success of compulsory attendance requirements, the data collection period, the end of World War II, and an increase in the minimum and maximum attendance age requirements (U.S. Census Bureau, 1947). Student enrollment continued to rise throughout the 1950s and 1960s due primarily to an
increase in births and students remaining in high school. Enrollment declined in the 1970’s and early 1980s, but rose again in the mid-1980s due, in part, to an upturn in prekindergarten and kindergarten attendance. Variances among data gathering times and truancy reporting practices continue to provide a challenge for those attempting to make year-to-year comparisons (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935; Sonnenberg, 1993).

The Rise of Evening and Common Schools

Evening schools were first recorded in Amsterdam in 1661. Originally, this form of schooling was made available to indentured apprentices. Students were taught reading, writing, math, and spelling during specified months, usually during the winter. As evening school’s popularity grew, the seasons, instructional hours, length, and curriculum varied due to location, the master’s qualifications, and the skill demand. Students often utilized the same buildings as those who attended day schools and, in some instances, were able to choose courses that reflected their personal interests (Seybolt, 1925).

As the Secretary of the Massachusetts State Board of Education and a supporter of the Prussian educational system, Horace Mann argued for a public education available to all, regardless of the student’s finances or background. Mann advocated that true education came as a result of a common learning and shared experiences (Baker, Chung, & Cai, 2016). Mann also advocated for competent teachers, increased mandatory attendance ages, and a diverse curriculum. In the common school, curriculum and classroom division were based on age, rather than reading ability. Mann believed that the schools and their structure would instill work force principles, such as discipline, obedience, punctuality, and organizational skills (Barabra, 2010).

Compulsory Law Opposition
From its inception, opposition to compulsory attendance laws was widespread (Rauscher, 2015). Opponents declared that the government was acting in an unconstitutional manner by forcing parents to ensure student school attendance. Parents cited their need for help at home, increased hardship due to needed supplies and clothes, as well as loss of potential income as rationale for resistance. Educators were concerned with the addition of unwilling and previously uneducated students into their classrooms (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935, Passow, 1977).

Further dissent came from those who foresaw an increase in legal ramifications due to enforcing truancy laws and an increased spending due to unequal educational environments, as well as funding additional teaching positions (Passow, 1977). Others argued for educating immigrant parents on the virtues of school and for reform of the current school system, but mandated attendance (Rausher, 2015).

**Truancy Court Cases**

*Massachusetts v. Frank Roberts*

In this case, Mr. Roberts was found to be not in violation of the Massachusetts compulsory attendance law after he sent his daughter to an unapproved private school. The court determined that the law dictated children receive an education. However, the method and location of the education was still the responsibility of the parent (Steffes, 2012).

*Quigley v. State of Ohio*

Patrick F. Quigley was found in violation of the compulsory attendance law due to his refusal to complete attendance monitoring forms used as evidence in truancy cases. Mr. Quigley’s appeal was denied by the Circuit Court of Ohio on the basis that the compulsory attendance law did not violate or interfere with parental rights. Justice Haynes’ use of *parens-*
*patriae* established a precedent that allowed the government to mandate certain actions considered to be in the best interest of the child, such as compulsory attendance (Quigley v. State of Ohio, 1891).

**Bailey v. State of Indiana**

The Baileys were charged in violation of Indiana’s compulsory attendance law. The State of Indiana filed an appeal to Indiana’s highest appellate court after the lower court ruled in favor of Bailey. Justice Dowling ruled in favor of the State, citing the state’s policing powers and the constitutionality of the compulsory law. The case reinforced the opinion that parental powers were not absolute and were subject to dictates made by constitutional laws (State v. Bailey, 1901; Provasnik, 2006).

**State of New Hampshire v. Jackson**

Mr. Jackson was found guilty of violating the compulsory attendance law when he removed his 10-year-old daughter from school, upon a doctor’s recommendation. The school board had not been consulted, nor did they give approval for the withdrawal. Due to Mr. Jackson’s failure to supply the court with the physician’s report documenting the severity of his daughter’s illness, the court ruled in favor of the state of New Hampshire. *The State of New Hampshire v. Jackson* affirmed the constitutionality of compulsory attendance laws (State v. Jackson, 1902).

**Commonwealth of Pennsylvania v. Edsall**

In the *Commonwealth of Pennsylvania v. Edsall*, Edsall attempted to employ the definition of the Fourteenth Amendment as grounds for noncompliance with the compulsory attendance law. Justice Scott declared Edsall’s argument invalid due to a precedent of state
power exemption from the Fourteenth Amendment. Scott subsequently confirmed the state’s policing authority regarding mandating attendance (*Commonwealth v. Edsall*, 1903).

*New York v. Ekerold*

Hagbard Ekerold was opposed to allowing his child to be vaccinated. As a result, he was non-compliant with the vaccination rule and unable to send his child to school. Due to continued absences from school, Ekerold was charged with violating the New York compulsory attendance law. The New York Court of Appeals ruled against Ekerold and reinforced mandatory vaccinations for school-aged children (Steffes, 2012).

*Pierce v. Society of Sisters*

In 1922, Oregon passed an amendment to the Compulsory Education Act that would prohibit the use of Parochial schools set to begin in 1926. In response, two schools, the Sisters of the Holy Names and Hill Military Academy, filed separate lawsuits against Oregon’s governor and state attorney general for violating their Fourteenth Amendment rights. Though both schools cited financial concerns, the Sisters of the Holy Names referred to a violation of the First Amendment, allowing for religious freedom. The Oregon District Court ruled in favor of the schools, placing an injunction on the amendment. The case was appealed to the Supreme Court of the United States. The Supreme Court of the United States upheld the District Court’s decision. *Pierce v. Society of Sisters* affirmed parents’ right to choose their child’s educational institution; public, private, or parochial (*Pierce v. Society of Sisters*, 1925).

*Farrington v. Tokushige*
The Territory of Hawaii’s legislature passed a law requiring schools to purchase a permit before teaching foreign languages. Restrictions were placed on instruction duration, curriculum, and supplemental materials. The Supreme Court ruled in favor of Tokushige on the grounds that the law violated both the Fifth and Fourteenth Amendments’ due process rights. The *Farrington v. Tokushige* ruling gave parents greater control over their child’s educational rights. This decision affirmed that arbitrary educational restrictions would not be tolerated (*Farrington v. Tokushige*, 1927).

**New Jersey v. Bongart**

In this case, Bongart was accused of violating the New Jersey compulsory attendance law. A college graduate and experienced teacher, he chose to home school his children rather than send them to public school. The court ruled against Bongart, citing the lack of socialization and group activities afforded to students instructed in the home. This case emphasized the shift from parental to state control of education decisions (*Steffes*, 2012).

**Wisconsin v. Yoder**

Members of the Old Amish religion objected to sending children to secondary schools, citing exposure to experiences and behaviors that conflict with their faith. In accordance with his beliefs, Mr. Jonas Yoder did not send his daughter to school upon completion of her 8th grade year. Wisconsin’s compulsory attendance law mandates that all children must attend school until they are 16-years-old. Mr. Yoder was in violation of that law and, as a result, received a $5 fine (*Shulman*, 2014).

The Supreme Court ruled in favor of Mr. Yoder. The issued ruling stated that forcing Mr. Yoder to comply with compulsory attendance laws would violate his First Amendment rights. The Court cited Amish children’s exposure to vocational and civic educational
opportunities as additional rationale. *Wisconsin v. Yoder* cemented parents’ right to make educational decisions that fall within their religious boundaries (*Wisconsin v. Yoder*, 1972).
Commonwealth v. Kerstetter

A mother from Snyder County, Pennsylvania was charged with truancy after her 5-year-old twins were habitually absent from Kindergarten. Mrs. Kerstetter defended her actions, citing a Pennsylvania’s State Board of Education policy. This policy mandates that children must be enrolled in school at 8 years of age. Additionally, children that begin school after Kindergarten are subject to compulsory attendance. The prosecution defended the truancy charges, citing the Commonwealth’s definition of the age in which children must attend school. In the Commonwealth of Pennsylvania, children between the ages of 8-17 are subject to compulsory attendance. However, if enrolled before their 8th birthday, they must follow the same attendance rules. As a result of those stipulations, the Supreme Court of Pennsylvania ruled in favor of the Commonwealth (Commonwealth v. Kerstetter, 2014).

Connections Between Academic Achievement and Compulsory Attendance

The National Defense Education Act of 1958

The United States federal government became actively involved in education reform in the late 1950s (Herold, 1974). In 1957, the Soviet Union outperformed the United States by launching Sputnik, the first satellite in space (Kringe, 2007). In response, President Dwight Eisenhower called for an increase in engineers and scientists as a matter of national defense. The National Defense Education Act focused on increasing the rigor and depth of mathematics and science classes. However, though school districts received some funding for the transition, teachers were not adequately trained or prepared to implement the new standards (Glater, 2018).

Then, in 1958, LIFE magazine published a three part study on the state of education in America. The results confirmed that increased educational reform was needed. According to the
study, teacher morale, training, and ability level were at an all-time low. Complaints of being underpaid and inadequate lesson planning time were among the findings (Herold, 1974).

**Elementary and Secondary Education Act (ESEA)**

Before the Elementary and Secondary Education Act (ESEA), a school census was implemented as a means for distributing funds proportionally to the number of students served, identifying educational and building needs, and to enforce compulsory attendance laws. Unfortunately, the states were not consistent in administering the census, creating an obvious gap as students moved from town to town (Deffenbaugh, Keesecker, & United States Department of the Interior, 1935; Casalaspi, 2017).

Themes of needing increased funding, planning time, teacher appreciation, and educator training continued to hinder measurable academic growth in the United States. President Lyndon B. Johnson’s Great Society program laid the groundwork for the Elementary and Secondary Education Act (ESEA) of 1965. Concerns regarding low-income families’ ability to provide adequate financial support for their children’s education prompted an increase in federal funding. The goal was to enable students of all socio-economic status levels to have the same opportunities to advance their educational potential (Casalaspi, 2017).

**The Coleman Report 1966**

In 1966, John Coleman was tasked with determining the fairness of the current public education system. Though the original scope of the assessment was centered on school desegregation conditions, Coleman and his team focused on educational outcomes. His surveys addressed how students were learning and what factors impacted education. Furthermore, results highlighted the fact that African-American students were academically behind their Caucasian
peers. Additional findings identified that a student’s home life, in addition to exposure to a diverse peer group, was the major indicator in academic achievement (Kantor & Lowe, 2017).

**Section 504 of the Rehabilitation Act of 1973**

Section 504 of the Rehabilitation Act of 1973 was enacted by Congress in response to the increasing amount legal actions on behalf of the disabled population. *Pennsylvania Association for Retarded Children (PARC) and Mills v. Board of Education of District of Columbia* are considered the impetus for the legislation. Section 504 prohibited public school programs from discriminating against individuals with disabilities. However, due to unclear regulations for public education, Congress enacted the 1975 Education for All Handicapped Children Act of 1975 (Coates, 1985).

**Juvenile Justice and Delinquency Prevention Act (JJDPA)**

Authorized in 1974, the Juvenile Justice and Delinquency Prevention Act (JJDPA) provides funding for the protection and care of children in the United States justice system. Through a series of reauthorizations, this funding is now available to states adhering to specific protocols: deinstitutionalization of status offenders (DSO), sight and sound, jail removal, and disproportionate minority confinement. DSO prohibits status offenders from being held in a juvenile detention centers or jails. Sight and sound mandates that juvenile and adult offenders have no contact with one another. Jail removal restricts the permanent placement of a juvenile in an adult jail. However, exceptions can be made. The disproportionate minority confinement (DMC) stipulation compels states to appropriately address racial disparities among the inmate population. In 2017, every state and U.S. territory, with the exception of Wyoming, Nebraska, and the American territory of Samoa were participants in the program. However, the U.S. Virgin
Islands’ funding was reduced due to noncompliance of the jail removal stipulation. (Coalition for Juvenile Justice, 2018).

**Education for All Handicapped Children Act (EAHCA) of 1975**

Before 1975, approximately one-half of handicapped children in the United States were receiving an appropriate public education (Pulliam & Van Patten, 2006). EAHCA provided federal aid for the implementation of programs and facilities designed to meet all students’ needs. Before this time, many states had neglected to provide necessary programs due to lack of the financial capacity. EAHCA provided states with monetary incentives based on the actual number of disabled students served and assistance for programs designed to meet handicapped students’ needs. Additionally, mandating procedural safeguards and designating that each state was exclusively responsible for providing the required educational services were part of the Act (Coates, 1975).

**Department of Education Organization Act 1979**

The goals of the Department of Education (DOE) were multi-purposed. The DOE was designed to safeguard educational equality measures, provide support services to educational institutions, increase stakeholder involvement in Federal programs and improve communication between all involved parties, and to advance accountability measures and implementation procedures of Federal educational programs. To achieve the objectives, the DOE institutes policies and initiates changes in accordance with Congressional law (Stallings, 2002).

**A Nation at Risk 1983**

The 1983 Nation at Risk report highlighted the concerns that the United States was falling behind its international peers in economics, education, engineering, and morality. The United States had become complacent in its position as a world leader. That attitude resulted in
identifiable weaknesses that, if not corrected, would cause America to lose its place as an international powerhouse (National Commission on Excellence in Education, 1983).

The report compared students in the United States with their global peers. The results were shocking and compelled a nation to undertake a daunting education reform process. The United States’ students scored lower on academic tests, scores were continuing to decline, large adult populations were illiterate, and all areas of academic performance were below average. The consequences of such academic deficits were daunting. Students were ill-equipped to perform high-skilled jobs such as those involving technology or the military (“A Nation at Risk,” 1983).

The path to educational reform was not as clear as the need for reform. Concerns over focusing too intently on reading and math, while ignoring basic logic skills and the humanities were raised. The goal, however, was clear; America’s students would focus on both academic and social excellence. Higher educational standards, parent and community support, and long-term planning would provide the framework for change (Vinovskis, 2009).

1989 President’s Education Summit

Despite repeated actions to increase student academic performance, the educational system seemed to be regressing, not progressing. President George W. H. Bush convened a bi-partisan educational conference to, once again, institute changes. The 1989 President’s Education Summit focused on increasing the federal government’s role in state and local education policies. The committee hoped to reestablish the United States’ academic supremacy among its international peers. To accomplish this feat, educational agencies would have greater flexibility in appropriating federal funds, but stricter accountability regulations. Additionally,
annual reports outlining the progress made toward attaining educational goals were mandated (Klein, 2014).

Success would be measured by the accomplishment of specified indicators. First, students would enter school already understanding basic skills. Second, there would be an improved performance on international achievement test scores. Third, the United States dropout rate would decline as at-risk student support services increased. As a result, adult functional literacy development and employment training opportunities would rise. The fourth measurement focused on the availability of qualified teachers who were able to instruct students with increased rigor, and up-to-date technology. The final indication of accomplishment would be the physical condition of the schools (Klein, 2014; “The President’s Education Summit”, 1989).

**Education Council Act of 1991**

The Education Council Act of 1991 created the National Educational Commission on Time and Learning (Civic Impulse, 2018). The Commission focused on researching five key components of elementary and secondary education: the school day and year length, homework’s role in education, subject-specific time management, continuous professional development opportunities, and the school’s role in hosting afterschool programs. They were also tasked with analyzing and recommending appropriate action measures concentrating on student motivational factors, the impact of student non-instructional time preferences, and the subsequent legalities and costs associated with increasing time spent at school (Civic Impulse, 2018; National Education Commission on Time and Learning, 1994).

The second section formed the National Writing Project. This project provided grant funding for professional development programs designed to advance writing techniques and
increase student performance. A national advisory board was established to oversee implementation. The third section enacted the civic education programs designed to further student comprehension of United States civic history, the Constitution, and the Bill of Rights. This was to be done through an expansion of the National Bicentennial Competition of the Constitution and Bill of Rights and congressional hearing simulations programs. The program was made available to all elementary school students, public and private. However, only secondary school students were allowed to participate in competitions. Funding and contracts, to be allocated by the Secretary of Education and appointed panel members, was provided to further the effort. Lastly, the National Council on Education Standards and Testing, comprised of 32 affiliates, was established and tasked with disaggregating information regarding educational standards, testing options, and their educational impact for constituents (Civic Impulse, 2018).

**National Commission on Time and Learning**

The committee formed in the Education Council Act of 1991 reiterated the need for changing how education policies and standards are implemented. The committee argued that the focus should be on academic content and the incorporation of technology. Educators need time to create lesson plans and implement standards into the coursework outlines. To meet that condition, organizations must instigate effective time management strategies and an increase in the school day and calendar. Additionally, the committee advised that the time of finger pointing had come to an end. The federal government, state agencies, and local education departments share the blame for the current educational downfall and must work together make a change (National Education Commission on Time and Learning, 1994).
Improving America’s Schools Act (IASA) 1994

Improving America’s School Act (IASA), outlined available federal grants and their requirements. Once such grant, Title I, is dependent upon multiple factors for funding. In the year following the grant reception, school improvement plans that incorporate stakeholder input and rigorous math and reading/language arts performance standards must be in the implementation process. Within the aforementioned time frame, states must provide an interpretation of average yearly progress (AYP) and its performance-based measurement process. Annual standards-based assessments were to be given at one point while in grades 3-5, once more while in grades 6-9, and then for the final time in grades 10-12 ("Summary of the Improving America's Schools Act", 1994).

The assessment data would then be disaggregated based on subgroups to provide schools and districts with a more comprehensive achievement report. Action plans to increase academic proficiency, including additional assessments, trainings, and instructional strategies were also mandated. School districts had flexibility in distributing Title I funds. Yet, the purpose was to implement necessary programs designed to increase student academic performance. However, schools that continued to fall below the state’s AYP for two consecutive years would face corrective actions. Furthermore, schools must focus on increasing parental involvement through meetings and activities designed to assist in standards-based learning comprehension ("Summary of the Improving America's Schools Act", 1994; Wong, Meyer, Mid-Atlantic Lab. for Student Success, & Temple Univ., 1998).

Districts were eligible to receive financial assistance for programs that concentrated on early childhood and adult education. Migratory children services were dependent upon the migratory status and could be utilized from when a child turns 3 until he/she is 21 years of age.
Schools serving those students who reside in non-traditional educational facilities could also receive funding. Additionally, schools that met the required demographic population of Indian, Native Hawaiian, or Native Alaskan heritage were eligible for specific grants ("Summary of the Improving America's Schools Act", 1994).

Further funding was available for professional development and teacher training programs, technology, implementation assistance programs, distance learning, library resources, drug awareness and prevention programs, anti-bullying programs, dropout prevention programs, equity programs, language programs, education improvement programs, programs for gifted students, charter schools, art education, reading programs, civic education programs, inner-city and rural performance grants, the National Writing Project, to offset costs for districts that increase the school day and year, funds for the Virgin Islands, school building improvement; public information programs, and math and science educational centers. Additionally, the IASA mandated zero-tolerance policies, as well as the continuation of funds for the National Center for Education Statistics, the Advisory Committee on Education Statistics, The National Assessment of Educational Progress, the National Assessment Governing Board, and the NAEP ("Summary of the Improving America's Schools Act", 1994).

**Individuals with Disabilities Act (IDEA) 1997**

The 1997 Individuals with Disabilities Education Act (IDEA) expanded on the individual state’s responsibilities regarding public education and the disabled student population. IDEA mandated that every public school student in every state receive a free appropriate public education (FAPE). Those with disabilities, ages 3-21, would not only receive FAPE, but services designed to enhance identified students’ least restrictive educational experience through programs and parental involvement (Nagel, 2008).
Goals 2000: Educate America

President William J. Clinton had served on President Bush’s 1989 educational summit committee. When President Clinton took office, he instituted additional changes using the previous work as a foundation when reauthorizing ESEA as Goals 2000 (Congress, 1994). Goals 2000 focused on school preparedness, increasing graduation rates, improving academic achievement scores, refining mathematics and science curriculum, strengthening literacy levels, and combating weapons and drugs in school (Vinovskis, 2009).

This legislation was designed to address assessments as a measuring tool for student achievement rather than attaching high-stakes to the outcome. The focus was to be on monitoring, evaluating, and addressing student progress toward overcoming deficits. Assessments should be viewed as tools to promote excellence and further students’ academic achievement goals. (Stedman, Others, & Library of Congress, 1993). Though the legislation eventually passed, due to unclear guidelines and implementation strategies, repercussions for those states failing to meet the requirements, and the methods employed to ensure the fair assessment of student sub-groups, it was largely ineffective educational reform policy (Vinovskis, 2009).

2001 National Education Summit

The premise that national security was dependent upon public education reform was utilized yet again. Educational standards were still not implemented effectively and the achievement gap between United States and international students continued to grow. The committee agreed that universal testing measures would be the most beneficial method of comparing students’ standards mastery. In addition to focusing on academic achievement, educators and administrators would have to work toward the advancement of all learners,
regardless of ability level, ethnicity, or socio-economic status. Furthermore, the committee recognized the importance of quality professional development opportunities designed to enhance educators’ understanding of implementing data-driven instructional practices in their classrooms (Achieve, 2001).

**No Child Left Behind Act (NCLB)-2001**

The No Child Left Behind Act (NCLB) became a law in January 2002. President George W. Bush furthered his father’s and President Clinton’s education initiatives. NCLB addressed many of the education deficiencies that had been present since the 1950’s. Accountability measures, educating all students, and teacher qualifications were at the forefront of NCLB. State and local education agencies were given flexibility to meet the strictures imposed by the law (LeFloch, Martinez, O’Day, Stecher, Taylor, Cook, & Rand Corp., 2007; Thomas & Brian, 2011).

NCLB required states to have specific reading and mathematics content standards and be prepared to implement science content standards by the 2005-06 school year. Annual reading and mathematics tests were required for every student, regardless of disability or English proficiency, in grades 3-8 and one time between grades 10-12. Additionally, science assessments would be incorporated by 2007-08. Standards and assessments for English proficiency were required by the 2002-03 school year and would require that IEP students would undergo annual testing (LeFloch et al., 2007).

AYP targets were also mandated for all students, including students with disabilities, low socio-economic status, limited English proficiency, and ethnicity groups. A school’s AYP consisted of students’ state standardized test scores, state standardized test student participation numbers, and one additional indicator chosen by the school or district. Additionally, by the
2013-14 school year, all students would be required to perform at least at the proficient level (Thomas & Brian, 2011).

To achieve optimum comparison results, the assessments must provide disaggregated data in order to identify subgroups whose academic performance was below proficient. Parents, teachers, and community stakeholders would now receive reports on school and district state standardized test performance. Federal assistance and penalties would be given to those schools and districts that consistently failed to meet AYP (LeFloc'h et al., 2007).

In addition to testing and accountability requirements, NCLB mandated that teachers obtain highly qualified status. Highly qualified teachers had earned a bachelor’s degree from an accredited college or university, held a state issued teaching license, and exhibited competent teaching practices (Thomas & Brian, 2011).

**NCLB and State Attendance Indicators**

Schools were given flexibility in determining the second academic indicator needed to compute AYP (Frey, 2010; Skinner, 2014; Stempel, Martin, Bronsert, Dickson, & Allison, 2017). One United States territory and 35 states used attendance as the gauge. Within those states and territory, accountability requirements designed to meet targets varied. The attendance objective in Montana was 80%, while in Indiana and Alabama, 95%. However, Arizona, District of Columbia, and Massachusetts chose to require a 1% attendance increase. Louisiana, Maryland, North Carolina, and South Carolina mandated a 0.1% increase. Alabama, Alaska, Arkansas, Montana, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Utah, and West Virginia focused on an attendance rate improvement when compared to the previous year. Washington used unexcused absences of 1% or less by 2014 as the indicator for AYP (Frey, 2010).
With the use of attendance as an academic indicator, greater focus was placed on students who exhibited frequent absences (Skinner, 2014). Those students traditionally displayed more behavioral issues, resulting in less instructional time (Attridge, Batiwalla, Booker, Hartigan, Schwartz, & Stone, 2016; Skinner, 2014; Stempel et al., 2017). A decrease in instructional time often resulted in lower test scores. Because AYP scrutinizes the percentage of students who passed the state academic assessment, absences affect those districts that do not choose attendance as their other academic indicator (Frey, 2010; Skinner, 2014).

**Race to the Top (R2T)**

Race to the Top (R2T) was a $4.35 billion education reform. Qualifying states were awarded funding based on their overall criteria score. Funds were to be used for the state’s educational advancements in curriculum, assessments, evaluation, and data management. Increasing school accountability measures and standard uniformity was among the goals established by R2T’s. To secure the R2T grant, states endured a lengthy application process. States had to show policies concerning improved evaluation, performance, and support strategies for educators and administrators; the ability to increase and maintain student achievement; instituting common standards and standard-based assessments; intervention and prevention strategies focused on consistently low-performing schools; and evidence of data-driven decision making. In addition, states had to prioritize sustainable education reform outlined in R2T (Howell, 2015).

R2T critics expressed concerns regarding the connection between teacher effectiveness and student test scores; the push for charter schools, and increased federal involvement in public schools. As a result, not every state applied for the grant. Of the 45 applicants, including the District of Columbia, 19 received grant funding. Florida and New York each received $700
million; Tennessee, $500 million; Georgia, North Carolina and Ohio, $400 million; Maryland and Massachusetts, $250 million; Delaware, $100 million, District of Columbia, Hawaii and Rhode Island, $75 million; Pennsylvania, $41 million; Illinois, $43 million; New Jersey, $38 million; Arizona, $25 million; Colorado, $18 million; Kentucky, Louisiana, $17 million (U.S. Department of Education, 2009).

**Individuals with Disabilities Education Act 2004**

Along with NCLB, the Individuals with Disabilities Education Act of 2004 attempted to bridge the student achievement gap by providing services designed to assist in the educational advancement of students with and without identified disabilities. To accomplish the goal, IDEA focused on three main intervention strategies: Early Intervening Services, Reading First, and Response-to-Intervention (Parkis, 2009).

Early Intervening Services allocated up to 15% of a school district’s federal funding to be utilized for K-12 early intervention programs designed to enhance students without identified disabilities educational experience. Programs and services could include professional development experiences or classroom supports including, but not limited to, behavior interventions, remedial instruction, and technology. Constraints were stipulated, requiring that the programs and interventions be scientifically-based (Cortiella & National Center for Learning Disabilities, 2006).

Reading First mandated scientifically proven reading programs for K-3 students. Qualifying elementary schools were provided funding for professional development, trainings, materials, strategies, screeners, and assessments. Since reading is related to higher achievement and higher achievement and positively correlates with proficiency on standardized testing, school districts had a vested interest in implementing effective reading programs (Parkis, 2009).
Response to Intervention strategy was structured in three tiers designed to provide scientifically-based enrichment services to low-achieving students. The tiers were fluid based on progress monitoring results and educator input. Through this process, student learning difficulties were recognized and addressed in a methodological manner that increased intervention. Also, with the implementation of IDEA 2004, school districts were prohibited from making attendance, educational evaluations, or special education services dependent upon the consumption of prescribed medication (Cortiella & National Center for Learning Disabilities, 2006).

**Every Student Succeeds Act (ESSA) 2015**

On December 10, 2015, President Obama authorized the Every Student Succeeds Act (ESSA) replacing NCLB. ESSA, built on the foundation of ESEA and NCLB, reiterated the Nation’s commitment to providing every student the best possible education. Learning from the deficiencies of NCLB, objectives for advancements in college and career readiness were at the forefront. The ESSA gave individual states, districts, and schools the flexibility to determine the distribution of funds and implementation process. The more tolerant strictures came with the understanding that graduation rates and academic achievement data be not only reported, but that the deficiencies be addressed. Each requirement focused on closing the achievement gap between subgroups and creating a more equal educational environment for all students (The Education Trust, 2016).

ESSA emphasized the following education initiatives: uniform standards, accountability, transparency, and federal funding. First, statewide content standards would be designed for those entering the workforce, as well as those continuing to higher education. Student progress toward standard mastery would continue to be evaluated by yearly assessments. Additionally,
accountability and measurement classifications were clear and focused on subgroups and chronically low-performing students. Every student’s individual score was to be factored into the school’s overall achievement scores. The district and school had to create and implement an action plan to address deficits found as a result of the annual assessment. Next, ESSA promoted transparency by reporting district and school achievement scores and the per student spending allotments. This information ensured that educational leaders, educators, parents, community members, and other key stakeholders would have a clearer understanding of the availability of rigorous curriculum, the distribution of subgroups, and the need for and availability of educator resources. Lastly, ESSA continued the federal funding provision for identified highly impoverished school systems (Meibaum, SEDL, & American Institutes for Research, 2016; The Education Trust, 2016).

Compulsory Attendance Laws

Compulsory attendance laws dictating the age requirement range, total number of days, and number of hours required of students vary in each state. Comparable to the inconsistencies among attendance laws, exceptions differ among the individual states. Children in Arkansas, Connecticut, Delaware, District of Columbia, Maryland, New Mexico, Oklahoma, South Carolina, and Virginia must attend school at the age of 5. Alabama, Arizona, California, Colorado, Florida, Georgia, Hawaii, Iowa, Kentucky, Massachusetts, Michigan, Nebraska, New Hampshire, New Jersey, New York, Ohio, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, West Virginia, and Wisconsin have a minimum attendance age requirement of 6 years old. Children must be attending school at age 7 in Alaska, Idaho, Illinois, Kansas, Louisiana, Maine, Minnesota, Missouri, Montana, Nevada, North Carolina, North Dakota, Oregon, and
Wyoming. In Washington, students are not required to attend school until 8 years of age (Diffey & Steffes, 2017).

Of the 50 states, Alaska, Arizona, Delaware, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Jersey, New York, North Carolina, North Dakota, Rhode Island, Vermont, and Wyoming release students from mandated attendance requirements at the age of 16. However, students in California, Connecticut, District of Columbia, Hawaii, Kansas, Louisiana, Nebraska, New Hampshire, Ohio, Oklahoma, Oregon, Texas, Utah, Virginia, Washington, and Wisconsin must attend school until their 18th birthday. The remaining states require school attendance until 17 years of age (The U.S. Department of Education Institution of Education Sciences’ National Center for Education Statistics, 2008).

Students in 26 states attend school for 180 days. Nine states have school year lengths that last between 170-179 days. Missouri has different time intervals based on a 5-day or 4-day school week. If a student goes 5 days a week in Missouri, he/she will attend 174 days compared to 142 days with a 4-day schedule. Kansas based its school year amount on grade levels. K-11th grade students attend 186 days, while 12th grade students are only required to attend 181 days. Students in Colorado have a 160-day school year. Three states specify between 181 and 189 school days, with New York authorizing 190. Conversely, Delaware, Idaho, Minnesota, Montana, Nebraska, Oregon, South Dakota, and Virginia do not have a specific allotment. Similar to those states without identified school year length, 17 states do not specify a compulsory attendance in terms of hours. All but eight of the remaining states vary the mandated hours based on grade level. Kentucky, Louisiana, Maryland, Michigan, Missouri,
North Carolina, Ohio, Virginia have consistent number of hours from grades K-12 (Snyder, deBrey, Dillow, National Center for Education Statistics, 2018).

**Truancy Definitions**

Although it is an issue in each of the Nation’s fifty states, truancy remains without a consistent definition. Each state’s Department of Education constructs a truancy definition that coincides with the current compulsory attendance legislation. Florida students are considered truant upon receiving 15 unexcused absences during a 90 day period (Florida Department of Education, 2018). Maine uses grade levels in its definition of truancy. Until the end of their 6th grade year, students must obtain five consecutive unexcused absences or a total of seven throughout the school year. However, those limits increase to seven and 10 respectively at the beginning of 7th grade (Maine Department of Education, 2018). Recent changes to New Hampshire’s truancy policy have reduced the number of unexcused absences from 20 to 10.5 (New Hampshire Department of Education, 2018). Tennessee students are limited to four unexcused absences (TCA 49-6-3007). Students in Colorado are truant if they have at least four unexcused absences a month or reach total of 10 during the school year (Colorado Revised Statute § 22-33-107, 2016). However, California provides a detailed description of truancy. Students are truant based on the number of unexcused instructional minutes. Authorities are notified when three 30-minute unexcused absences have occurred (California Department of Education, 2018).

While the states mentioned above focus only on unexcused absences, Georgia scrutinizes both the total allowable amount, 15, and the number of unexcused absences, seven (Georgia Department of Education, 2014). Nebraska considers all absences when determining truancy. Students that miss at least 20 days are considered truant (Nebraska Revised Statute 79-201).
Accountability Measures and Academic Achievement

NCLB and ESSA incorporated student attendance into states’ accountability practices, resulting in a variety of attendance tracking methods. Effective monitoring of a school or district’s average daily attendance (ADA), chronic absenteeism rates, and truancy numbers provides stakeholders with a comprehensive understanding of individual schools, districts, and the state’s overall academic performance (Meibaum, SEDL, & American Institutes for Research, 2016; The Education Trust, 2016).

A school’s ADA is the percent of students in attendance each day. While the ADA provides an overall attendance account, it does not specify how absences are accumulated. Groups and individuals who are chronically absent can be hidden among this measurement technique’s broad parameters (Rafa & Education Commission of the States, 2017).

According to the federal government, a student that misses 15 or more school days per year is considered chronically absent. However, the definition and measurement indicators vary among states. When determining the qualifications for chronic absenteeism, some states utilize absence percentages, rather than a specific number of days. However, regardless of the measurement technique, all absences, unexcused, excused, or suspensions, are counted. Then, the chronic absenteeism totals are incorporated into the state’s report card (Stempel, et al., 2017).

While chronic absenteeism measures the total number of absences a student accumulates, truancy focuses only on unexcused absences. Truancy does not have a uniform definition. As a result, it is difficult to gather an accurate account of the truancy data in the United States (Baker, Sigmund, & Nugent, 2001). However, many truancy indicators have been consistently recorded. Those include, but are not limited to, parental values and education background, a history of poor academic performance, substance abuse (Henry, 2007), disciplinary actions, single-parent
families, delinquent behaviors, transportation issues, and religious beliefs (Baker, Sigmon, and Nugent, 2001; Harakeh, Looze, Schrijvers, Dorsselaer, and Vollebergh, 2012).

Due to the ESSA’s annual chronic absenteeism reporting requirements, government officials, district leaders, members of educational institutions, community members, parents, and other stakeholders now have increased awareness of the amount of instructional time missed due to excessive absences. In 2013-14, over 6 million students were absent at least 15 days during the school year (Rafa & Education Commission of the States, 2017). Two years later, the numbers had grown to over 7 million (Bauer, Liu, Schanzenbach & Shanbaugh, 2018). No sub-group was exempt from the impact. Nationwide, chronic absenteeism ranked highest among American Indian and Pacific Islander students, while Asian students were the lowest. Non-English learners and students with disabilities also exhibited a greater propensity for absences than their English speaking counterparts (Schanzenbach, Bauer, and Mumford, 2016).

Many states have implemented programs designed to address the chronic absenteeism epidemic. Arkansas’s Make Every Day Count initiative, New York’s The Every Student Present! Campaign, Utah’s Utah Children campaign, Arizona’s Abolish Chronic Truancy (ACT) Now, and the Truancy Reduction Demonstration Program (Baker, Sigmund, & Nugent, 2001) enhance public awareness of the importance of regular school attendance. They reach across cultural and language barriers through radio announcements, websites, and materials distribution. Additionally, some states have constructed databases that monitor absenteeism, while others have incorporated attendance tracking into their school improvement plan requirements (Rafa & Education Commission of the States, 2017).
Truancy and Middle School

In the 2013-14 school year, almost 93% of American middle schools experienced chronic absenteeism (Bauer, Liu, Schanzenbach & Shanbaugh, 2018). Washington, the District of Columbia, and Alaska ranked among the highest, ranging between 21-26%. However, the mean was 13-14% (Schanzenbach, Bauer, and Mumford, 2016). Yet, according to studies, attendance in middle school is pivotal when forecasting future academic enrollment and success (Balfanz, Herzog, MacIver, 2007; Easton & Englehard, 1982; Mann, Kristjansson, Smith, & Sigfusdottir, 2016).

Easton and Englehard’s (1982) study determined that as absences increase, reading achievement levels decrease. This was especially true for students in grades 7-8. Caldas’ 1993 study of Louisiana’s public school systems identified a relationship between attendance and achievement in the K-12 setting. Roby (2004) also discerned a correlation between attendance and achievement, specifically in grades 4, 6, 9, and 12. These results were from a comparison of ADA and average student performance levels, rather than individual student attendance and achievement data (Caldas, 1993; Easton & Englehard, 1982; Roby, 2004).

Gottfried (2009) analyzed the relationship between excused and unexcused absences and student achievement. He found parallels between excused absences and higher reading and math scores, as well as results linking higher unexcused absences and lower math scores. The data reinforced claims made by previous studies regarding an association between absences and achievement (Monk & Ibram, 1984).

Birioukov (2016) illustrated the long-term impact of consistent middle school attendance on high school graduation rates. Results showed that students who were absent more than 10% of their 6th grade school year had a greater probability of not graduating compared to those who
were in attendance more than 90\% of the same year. Reports also indicated a relationship between poor performance in reading/language arts and math and increased episodes of disciplinary behavior.

**The Evolution of Standardized Testing**

Education reformer Horace Mann has been credited with the beginning the era of standardized testing (Caldwell & Courtis, 1925). Mann became interested in comparing the student performance among schools and as a grade-level promotional tool. Standardized testing measures would be a way to determine the effectiveness of current instructional practices, as well as academic achievement (Baker, Chung, & Cai, 2016). Upon visiting a school, Mann would test students to determine their comprehension levels, as well as the instructor’s effectiveness (Caldwell & Courtis, 1925; Gallagher, 2003; Rothman, 1995). This tool was used to modify and adjust the curriculum and teaching strategies to meet the identified needs (Scott, 2004).

The use of standardized tests as a grouping tool gained further momentum when, in 1901, the College Entrance Examination Board began administering entrance examinations. These written-response assessments were designed to standardize admission policies among colleges and to encourage curriculum uniformity in secondary schools (Atkinson, Geiser, & University of California, 2009).

In 1905, Alfred Binet and Theodore Simon developed a standardized intelligence test. The 30-question test measured French students’ ability to complete common classroom skills (Wolf, 1973). By 1973, Edward Thorndike and colleagues had developed an Americanized version of the intelligence test. Thorndike’s assessment focused on drawing, handwriting, language, mathematics, reading, and spelling (Wigdor & Gardner, 1982).
Intelligence tests were widely utilized in schools until *Larry P. v. Riles* (1979). In *Larry P. v. Riles*, the plaintiff asserted that African-American children were disproportionately placed in special education classes due to results from a biased intelligence test. The court ruled in the plaintiff’s favor, determining that the defendant had violated the Civil Rights Act, the Rehabilitation Act, and the Education for All Handicapped Children Act while willfully engaging in discriminatory practices.

The Alpha Army Test increased efficiency among standardized testing models (Yerkes, 1923). Administered by the Army, the tests measured aspiring officers’ intellectual ability (Yerkes & Yoakum, 1920). The success of this assessment practice encouraged schools to employ similar practices when grouping students (Yerkes, 1923).

Carl Brigham and a group of colleagues modified the Army’s test to be utilized for college readiness assessment, thus creating the Scholastic Aptitude Test (SAT). By the end of the 1930’s, all Ivy League scholarships were based on SAT scores. In 1952, the verbal portion of the assessment was organized into content sections: reading comprehension, understanding of analogies and antonyms, and ability to complete sentences. (Lawrence, Rigol, Van Essen, Jackson, College Entrance Examination, & Educational Testing, 2003).

The Educational Testing Service (ETS) opened in 1948. This came in direct response to the growing need for standardized assessments. Since its inception 70 years ago, ETS has diversified and now creates, administers, and grades multiple standardized assessments. The company also allocates time and funding into the advancement of educational research (Rourke, Meyer, & Ingram, 2018).
The Evolution of High-Stakes Testing in Tennessee

Tennessee students have participated in standardized testing since the 1980’s. In 1989, the Tennessee Comprehensive Assessment Program (TCAP) was implemented as a measurement tool for mastery of skills in mathematics, reading, language arts, science, and social studies. The criterion-referenced assessment was mandatory for all students in grades 3-8. However, accommodations and modifications were allowed for students with special needs. The results were intended to assess students’ current comprehension and then used as a guide for future instruction (U.S Department of Education, 2006).

Tennessee’s accountability plan was designed to ensure that students in grades K-8 received the best education available. The goal was to test 95% of all students, with an overall reading, language arts, and writing proficiency of 83%. The plan also strove for 79% of mathematics students to score in the proficient category. Additionally, school districts were to sustain a 93% attendance rate. If unable to do so, districts were given the option to show levels of improvement toward the benchmark (Winstead, 2006).

The 2014-2015 school year signaled a new age for testing in Tennessee. The Partnership for Assessment Readiness for College and Careers (PARCC) replaced the TCAP assessment. PARCC focused on Common Core standards, constructed-response questions, and task-performance measurements. However, legislation passed by the Tennessee General Assembly banned Tennessee implementing PARCC assessments, and the testing contract was given to Measurement, Inc. Continued to be plagued by testing malfunctions, Measurement, Inc.’s contract was nullified in April of 2016. Questar, founder of TNREADY, was then named as Tennessee’s newest testing company (Tennessee Department of Education, 2018b).
The TNReady achievement assessment was designed to provide a more comprehensive view of student achievement than the previous measurement model. Achievement levels would be identified through four distinct categories: mastery, on-track, approaching, and below grade-level expectations. Feedback explaining students’ areas of strength and weakness would assist both educators and parents in ensuring academic growth (United States: Tennessee elementary and middle school, 2017).

Intended for grades 3-8, with outcomes linked to teacher evaluations and student report cards, TNReady assessed student knowledge through a variety of formats. The traditional multiple choice questions were now paired with short answer and fill-in-the-blank responses. Increasing student problem-solving skills, critical thinking abilities, and writing abilities were the foundation of the rigorous test. Additionally, for the English/language arts portion, students were required to complete a writing task as part of the evaluation. The mathematics section experienced changes as well. Students were no longer allowed to use a calculator throughout the entire test (Tennessee Department of Education, 2018c).

In the 2016-17 school year, students in completed their first TNReady tests. Results showed that in English/language arts, 65.6% of Tennessee’s students fell into the approaching expectations and below expectation categories. Similarly, in mathematics, 62% did not meet the requirements for on track or mastery levels. The science assessment, still under the TCAP’s reporting categories, reported that 58.5% scored advanced or proficient. Furthermore, social studies did not receive reports due to field testing (United States: Tennessee elementary and middle school, 2017).

Plagued by testing issues, Questar lost full control of testing services. In the 2018-2019 school year, Questar will be responsible for test distribution and scoring the assessment. ETS
will hold the contract for both the testing development and design options. According to the Tennessee Department of Education, the 3rd and 4th grade students will experience a reduction in English/language art testing, while students in 5th thru 8th grade will have science assessments that will be reduced by 25 minutes (Tennessee Department of Education, 2018b).

**Tennessee and Compulsory Attendance**

The Tennessee Compulsory School Attendance Law (TCA-49-6-3002a) mandates school attendance for children ages 6-17. However, school districts can enact attendance requirements provided that these requirements align with the state law. Districts adhere to the guidelines by providing the following: reasonable minimum attendance requirements; consistent monitoring and parent notification systems; emergency policies for situations outside of students’ control; due process appeal procedures; and providing alternative education programs.

Children can be excused from compulsory attendance due to extenuating circumstances. For example, a doctor can indicate that a child is too impaired mentally or physically to attend school. Additionally, a child is excused from mandatory attendance upon obtaining a high school diploma, if a parent has filed an intent to homeschool form or has been refused attendance by an age-appropriate school in the resident district (Tennessee Department of Education, 2017).

Also, Tennessee’s child labor law provides employment guidelines to ensure that agencies do not interfere with academic pursuits. Restrictions are dependent upon both the child’s age and the school term. During the school term, children ages 14-15 are allowed to work a total of three hours each day and a total of 18 hours per week. Work hours must fall between 7 a.m. to 7 p.m. When school is no longer in session, the maximum hours are increased to eight per day, from 6 a.m. until 9 p.m., with a maximum of 40 hours for the week. Minors ages 16-17 are allowed to work during non-school hours. Work hours are also restricted Sunday
through Thursday between 10 p.m. until 6 a.m. When school is no longer in session, the maximum hours are increased to eight per day, from 6 a.m. until 9 p.m., with a maximum of 40 hours for the week (Child Labor Act, n.d.).

**Legal Ramification for Truancy in Tennessee**

Each school district is required to implement tiered truancy intervention programs. Though they vary by location, the first tier typically involves parent notification, student attendance contracts, and continued monitoring. The second tier extends prevention into disciplinary actions, such as community service or court proceedings. When students reach the third tier, juvenile courts assign and enforce penalties (TCA. §§ 37-1-132, 49-6-3007(f), 2018).

Students who have 10 consecutive absences or 15 absences within a semester can face grade-level retention and/or loss of driving privileges (TCA. § 49-6-3017, 2018). Depending upon the frequency and severity of the violations, parents can accrue legal charges due to their child’s lack of attendance compliance. Consequences could include, but are not limited to, warnings, fines, jail time, and loss of custody (TCA. §§40-35-111, 49-6-3007(e)-(f), 49-6-3009, 2018).

In addition to allowable absences granted by individual school districts, Tennessee state law stipulates certain exclusions as well. Attendance exemptions can be made in the event of physical and/or mental disabilities that prohibit school participation (TCA. § 49-6-3005(a)(1), 2018). Also, absences due to religious observance or instruction and those related to military deployment are excused (TCA. §§ 49-2-130, 49-6-3005(d), 49-6-3019, 49-6-3022, 2018).

**Unresolved Issues**

Each year, approximately 5 - 7.5 million students across the United States are absent almost a month of school (Ginsburg, Jordan, & Chang, 2014). These numbers include both
excused and unexcused absences, with poor attendance being defined as a total of three or more absences. Low achievement scores, deficient reading levels, and increased drop-out rates have been linked to those absences (Balfanz, Herzog, & Mac Iver, 2007; Olson, 2014).

The relationship between achievement and varying degrees of attendance was highlighted in the 2013 National Assessment of Educational Progress (NAEP), also known as The Nation’s Report Card. The NAEP, focusing on 4th and 8th grade mathematics and reading scores, identified three attendance categories: no absences, 1-2 absences, and three or more absences. The identified absences were only in relation to the month prior to testing. The results indicated that 4th and 8th grade student achievement scores decreased as absences increased (National Center for Education Statistics, 2013).

According to the NEAP, Montana and New Mexico had among the highest 4th grade absentee rates. One-fourth of the students self-reported missing a minimum of three days in the month prior to testing. However, California, Georgia, Illinois, Indiana, Massachusetts, New Hampshire, Texas, and the Department of Defense (DOD) schools ranked among the lowest in absentee rates for 4th grade. Arizona, Montana, New Mexico, Oklahoma, Oregon, and Wyoming had the highest absenteeism in the 8th grade, while Georgia, Illinois, Indiana, Massachusetts, Texas, Vermont, and DOD schools ranked among the lowest. Comparatively, on the 4th grade mathematics assessment, students with no absences scored an average of 246 out of a possible 500. Those missing three or more days averaged a 233. On the 4th grade reading assessment, those students with no absences scored an average of 225 out of a possible 500, while those with three or more absences averaged a 214. The 8th grade mathematics and reading assessments showed similar discrepancies. On the mathematics assessment, students with no absences scored an average of 18 points higher than those with three or more absences. Students with perfect
attendance the month before the reading exam scored 13 points higher than those missing three or more days (Ginsburg, Jordan, & Change, 2014).

An abundance of literature exists on compulsory attendance, truancy, and student achievement (Monk & Ibram, 1984; Birioukov, 2016). A study completed by the Baltimore Education Research Consortium focused on the relationship between student attendance during the first month of school and future attendance. The results indicated that students who are absent less than two days during the first month of school average less absences throughout the school year, compared to those who miss two or more days during the first month (Olson, 2004).

Roby (2004) found a relationship between Ohio’s school-wide attendance and student achievement on the Ohio Proficiency Test. Student achievement scores in grades 4, 6, 9, and 12 were analyzed. Findings identified a greater statistically significant relationship between attendance and achievement occurred in grade 9, with grades 4, 6, and 12 falling in the moderate to strong range.

Balfanz, Herzog, and Mac Iver (2007) studied early student disengagement identification and intervention strategies. The researchers first identified the relationship between student achievement gaps and attendance, effort, and behaviors. They found that, by the 8th grade, students in high-poverty schools who experienced failing grades and had poor attendance were more likely to drop out of high school than those who did not fall into either category (Neild & Balfanz, 2006). Gottfried’s (2010) study also revealed a statistically significant relationship between attendance and learning outcomes. Though factors other than attendance can contribute to lower academic achievement, positive attendance rates have been routinely identified as an indicator for student success (Balfanz, Herzog, & Mac Iver, 2007; Neild & Balfanz, 2006; Roby, 2004).
This literature review focused on historical perspectives, in addition to laws and perceptions in relation to achievement and truancy. The existing literature provides evidence that attendance is related to student achievement. However, there is limited information regarding the impact of short-term truancy on academic achievement. This knowledge would be useful in determining appropriate truancy intervention strategies and ensuring the availability of appropriate professional development opportunities (Gottfried, 2009).

**Summary**

Research has identified a connection between middle school truancy and the increased risk of becoming a high-school dropout (Kennelly & Monrad, 2007). Understanding the history, laws, and perceptions surrounding compulsory attendance enables the creation of more effective intervention and prevention techniques. With the Tennessee Department of Education’s directive factoring chronic absenteeism totals into the accountably measurements, districts and schools have increased pressure to identify, monitor, and support those habitually absent students (Tennessee Department of Education, 2018a).

Significant research has been conducted on truancy factors, interventions, and student achievement (Birioukov, 2016; Gottfried, 2009; Monk & Ibram, 1984), as well as on student and parent perspectives of attendance laws (Department of the Interior, 1935; Sheldon, 2007; Steffes, 2012). However, there are considerable gaps in available research concerning limited truant behavior and academic achievement. This study strives to address the absence of this literature.
Chapter III: METHODOLOGY

Introduction

The purpose of this quantitative study was to investigate and understand truancy’s impact on student achievement. Student achievement data and attendance reports were analyzed to examine how truancy affects student achievement scores on the TNReady mathematics and English/language arts assessment.

Chapter Three contains the research procedures utilized to conduct this study. Additionally, this chapter discusses the population and sampling techniques and the research procedures and instruments. Variables, statistical tools, and constructs were identified and explained. A data analysis and summary completes the chapter.

Description of Quantitative Research

Quantitative research focuses on quantifying an issue through the use numerical data. The quantification of an identified problem allows researchers to detect patterns. Quantitative research is often characterized by a large sample size with data collection centered on controlled methods. These methods include, but are not limited to, surveys, interviews, longitudinal studies, polls, and structured observations (Ary, Jacobs, Sorensen, & Walker, 2014).

Research Questions

The study will address the following research questions:

1. Is there a significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year, and those students who were not truant in either year?
2: Is there a significant difference between the TN Ready English/Language Arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year, and those students who were not truant in either year?

**Population and Sample**

The study’s target population includes students in a rural-Appalachian school system. Participant’s ages ranged from 9-14. The selected schools met the study’s age and grade-level requirements. The sample included 144 students. Participants were selected using stratified sampling. Stratified sampling allows for the division of a large population group into smaller subgroups. This study applied the sampling technique to separate truant and non-truant students in the 2016-2017 and 2017-2018 school years. Each participant that met the truant criterion was utilized in the study. A random sample from the non-truant group was selected to ensure a representative population (Ary, et al., 2014).

**Description of Instruments(s)**

The 2016-2017 and 2017-2018 school year student attendance records were gathered using daily attendance data from the district’s county-wide attendance program. Attendance records for students in grades 3-8 were collected for this study. Validity was assumed by the ability of the school district to ensure accurate and updated attendance data. Reliability was assumed due to the use of school district attendance protocol. However, some human error is to be expected.

The 2016-2017 and 2017-2018 TNREADY mathematics and English/language arts scores were gathered from data released by district’s federal programs director. TN READY achievement test validity has been understood and is used as an established measurement instrument reliability instituted by the Tennessee Department of Education. TNReady
achievement assessments measure student academic progress using the following descriptors: mastered, on track, approaching, below. Students in grades 3-8 participate in annual TNReady testing covering English/language arts, mathematics, social studies, and science standardized content (Tennessee Department of Education, 2018a). Student mathematics and English/language arts results were utilized for this study.

Research Procedures and Time Period of the Study

This quantitative study began with the Carson-Newman University IRB authorization. Following the authorization, permission was obtained from the school district to access data and conduct the study. Permission was then acquired from the principals of the selected schools. Student TNReady achievement data and attendance data were collected immediately upon receiving approval from the district and individual principals. The 2016-2017 and 2017-2018 school year attendance data used for this study was based on the state’s truancy definition and guidelines. Attendance reports and TNReady student achievement data were gathered from September to October 2018.

Data Analysis Procedures

For the purpose of this study, a stratified random sample was used to allow for the analysis of data retrieved from a small group to be applied as generalizations for a larger population (Ary, et al, 2014). The parameters established by the Tennessee Department of Education were used when assigning truancy status. A student who has received five unexcused absences is considered truant. A student who has received less than five unexcused absences falls within the non-truant category (TCA 49-6-3007). This resulted in two lists: one detailing the population of those student who were not truant in the 2017-2018 school year, but were truant in 2016-2017 school year, and students who were not truant for both the 2016-2017 school
year and the 2017-2018 school year. The sample size of 144 students was chosen due to numerical availability.

To reduce the possibility of bias, a systematic random sampling technique was used. This method afforded the same probability for each student to be selected for the study, which allowed for generalized assumptions to be generated from the data. The same number of participants were chosen from each sub-group. Seventy-two participants met the truancy criteria. Each qualifying truant member was utilized in the study. Upon the strata’s division, each student in the non-truant category was assigned a number from 1 to 178 with 178 being the population size. A systemic random sample was utilized due to the availability of a complete list of the 2016 thru 2018 school year non-truant population. The list was randomly assigned to avoid an unintentional standardized arrangement sampling bias. The data was then transferred to a truant number table and a non-truant number table. After creating a sampling fraction n/N, where n is the sample size and N is the population size, the identified number participant from each list was selected until the desired sample size was attained (Huck, 2012).

The data was analyzed using a multivariate analysis of variance Manova statistical test (Wall, 2018). The Manova tested for variances between the independent categorical variables, 2016-2017 and 2017-2018 student attendance, and the dependent interval variables, TNReady mathematics and English/language arts assessment scale scores (Ary et al, 2014). Scale scores are disseminated into four categories: mastered, on track, approaching, below (Tennessee Department of Education a, 2018). The Statistical Package for the Social Science (SPSS) utilized the data to perform applicable statistical tests. Additionally, the one-way Manova test was deemed appropriate due to the adequate sample size (Dimitrov, 2008).
A Normal Q-Q plot was used to confirm multivariate normality. While a scatterplot matrix was used to confirm the linear relationship between the dependent variables, the 2017-2018 TNReady mathematics and English/language arts achievement scores, and the independent variables, students who were truant in the 2016-2017 school year, but not truant in the 2017-2018 school year. Multi-collinearity was assessed and found using a Pearson correlation and homogeneity of variance-covariance matrices were assessed by Box’s test of equality of covariance matrices (Huck, 2012).

Summary

Chapter Three explained the study’s data collection methods. A mixed-methods research study was used to conduct this study. Attendance data were analyzed to examine the effect of truancy on TNReady mathematics and English/language arts scores. Research results will be useful in understanding the relationship between truant behavior and academic achievement.
CHAPTER 4: RESULTS

This chapter explains the results of the one-way multivariate analysis (MANOVA) described in the third chapter. The purpose of this chapter was to test the research questions stated in the first chapter. The statistical analysis was utilized to answer the research questions that directed the study:

Question 1: Is there a significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year?

Question 2: Is there a significant difference between the TN Ready English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year?

Based on the literature study, it is expected that one year of truancy will have a significant impact on the TNReady mathematics and English/language arts scale scores. To test the hypotheses of research questions 1 and 2, the TNReady mathematics and English/language arts scale score of students who were truant in 2016-2017, but not in 2017-2018, were compared to the scale scores of students who were not truant in either year using a one-way multivariate analysis (MANOVA). The results were utilized to test the following hypotheses:

Ha1: There is a significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year.

Ha2: There is a significant difference between the TN Ready English/Language Arts achievement scores of students who were truant in the 2016-2017 school year, but were
not truant in the 2017-2018 school year and those students who were not truant in either year.

**Descriptive Statistics**

The data is representative of the research district’s 2016-2018 student attendance scores and the 2016-2018 TNReady mathematics and English/language arts achievement scale scores, with a sampling of 144 students equally divided between the study’s criteria. The independent variable, attendance, was measured on a categorical scale (truant or non-truant). The dependent variables, TNReady mathematics and English/language arts achievement scale scores, were measured using a nominal scale. Due to the initial assumption results, a one-way MANOVA was conducted with and without the outliers to allow for a comparison of the results’ statistical significance.

**Multivariate Analysis**

A review of the initial assumption verification revealed that the data was not normally distributed for math and non-truant participants, as assessed by a visual inspection of Normal Q-Q plots. Figures 4.1-4.4 display the distribution levels for students meeting both the truant and non-truant criteria. The degree in which the collection of dots follow a diagonal line is used to assess a Normal Q-Q plot. In this analysis, the data did not follow the diagonal line for both the English/language arts and mathematics and non-truant participants (Laerd Statistics, 2015).
Figure 4.1

*Normal Q-Q plot analysis for English/language arts students meeting truant criteria*

![Normal Q-Q plot analysis for English/language arts students meeting truant criteria](image)

Figure 4.2

*Normal Q-Q plot analysis for mathematics students meeting truant criteria*

![Normal Q-Q plot analysis for mathematics students meeting truant criteria](image)
Figure 4.3

Normal Q-Q plot analysis for non-truant English/language arts students

![Normal Q-Q plot for ELA scale scores for non-truant students](image)

Figure 4.4

Normal Q-Q plot analysis for non-truant mathematics students

![Normal Q-Q plot for Math scale scores for non-truant students](image)
Univariate outliers identify independent variable groups that have an abnormally large or small value when compared to the other scores in the data set. Univariate outliers are identified due to the possible effect they have on the data set’s mean and standard deviation, thus influencing impacting the statistical results (Laerd Statistics, 2015). Table 4.1 displays the result of the univariate outlier analysis, as assessed by the visual inspection of the box plot for values greater than 1.5 box-lengths from the edge of the box.

Table 4.1

*Univariate analysis identifying outliers*

Conversely, multivariate outliers identify an unusual grouping of dependent variable scores. When using a Mahalanobis distance test, a study with two dependent variables has a critical value of 13.82. A data point comparison of the critical value and the Mahalanobis distance value detects those that surpass the critical value (Weisburg, 2014). The study’s analysis identified eight participants with a value greater than 13.83, signifying that multivariate outliers were present.
The assumption of linearity identifies a correlation between the dependent variable groups and each independent variable group (Laerd Statistics, 2015). When utilizing a scatterplot, data resulting in a linear relationship appears to form a straight line. Figure 4.5 and 4.6 illustrate that linear relationships were found between ELA and math scale scores for truant and non-truant students, as assessed by scatterplot.

Figure 4.5

*Truant scatterplot matrix*
Multi-collinearity was assessed using a Pearson correlation ($r=.975$, $p=.000$). A correlation greater than 0.5 signifies a high correlation, resulting in multi-collinearity. Additionally, homogeneity of variance-covariance matrices were not found, as assessed by Box’s test of equality of covariance matrices ($p=.000$). The significance level (p-value) represents the homogeneity. Obtaining a significance value of $p < .001$ indicates a violation of the homogeneity of variance-covariance assumption. The test’s p-value of .000 suggests that variances among dependent variable group combinations are not equal. Furthermore, non-truant pupils displayed higher scale scores on both the ELA and math assessments ($M=338,000$, $SD=158.23623$; $M=330.2083$, $SD=158.81426$, respectively) than truant pupils ($M=312.32889$, $SD=34.04535$; $M=304.3889$, $SD=36.08502$, respectively).

A Wilks’ Lambda (Wilks’ $\Lambda$) multivariate statistic was used to determine the significant difference between attendance on TNReady English/language arts and mathematics scale score.
Obtaining a probability value of less than .05 establishes that the test was significantly significant (Van Aelst & Willems, 2011). As illustrated in Table 4.2, The Wilks’ Λ revealed a probability score of .405, indicating that there was not a statistically significant difference between attendance on the combined dependent variables, $F(2, 141) = .908 \ p>.005$; Wilks’ Λ = .405; partial $n^2 = .013$.

Table 4.2

Multivariate tests

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<td>F</td>
</tr>
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<tr>
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<td>Error df</td>
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<tr>
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<td>Sig.</td>
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<tr>
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<tr>
<td>Hotelling's Trace</td>
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<tr>
<td>Roy's Largest Root</td>
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<tr>
<td>Attendance</td>
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<td>Hotelling's Trace</td>
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<tr>
<td>Roy's Largest Root</td>
<td>.013</td>
</tr>
</tbody>
</table>

a. Design: Intercept + Attendance
b. Exact statistic

The eight outliers identified in the initial MANOVA were removed prior to running the second analysis. Testing the normality assumption revealed that the data was normally distributed for math and non-truant participants, as assessed by a visual inspection of Normal Q-Q plots. In this test, as shown in Figures 4.7-4.10, data followed the diagonal line for both the English/language arts and mathematics truant and non-truant participants.
Figure 4.7

Normal Q-Q plot analysis for truant English/language arts students

![Normal Q-Q Plot of ELA scale score](image)

Figure 4.8

Normal Q-Q plot analysis for truant mathematics students

![Normal Q-Q Plot of Math scale score](image)
Figure 4.9

*Normal Q-Q plot analysis for non-truant English/language arts students*

![Normal Q-Q plot of ELA scale score](image)

Figure 4.10

*Normal Q-Q plot analysis for non-truant mathematics students*

![Normal Q-Q plot of Math scale score](image)
Figure 4.11 displays the absence of univariate outliers due to the removal of initial MANOVA’s eight identified outliers. Additionally, the data was tested for multivariate outliers. The Mahalanobis distance test revealed that all values were less than 13.82, signifying that multivariate outliers were not present (Weisburg, 2014).

Figure 4.11

Univariate analysis

Furthermore, the linearity assumption was tested using a scatterplot. Figure 4.12 and Figure 4.13 illustrate the linear relationships found between ELA and math scale scores for truant and non-truant students.
Figure 4.12

*Truant scatterplot matrix*

![Truant scatterplot matrix](image)

Figure 4.13

*Non-truant scatterplot matrix*

![Non-truant scatterplot matrix](image)
Multi-collinearity was assessed and found using a Pearson correlation (r=.671, p=.000). A correlation greater than 0.5 signifies a strong correlation, resulting in multi-collinearity. Although the assumption had been violated, the data was not altered due to the resulting similar pattern in the regression model.

Conversely, homogeneity of variance-covariance matrices were found, as assessed by Box’s test of equality of covariance matrices (p=.999). The significance level (p-value) represents the homogeneity. Obtaining a significance value of p < .001 indicates a violation of the homogeneity of variance-covariance assumption. The test’s p-value of .999 suggests that variances among dependent variable group combinations are equal. Furthermore, non-truant pupils displayed higher scale scores on both the ELA and math assessments (M=313.5000, SD=27.73514; M=306.4844, SD= 28.17856, respectively) than truant pupils (M= 313.1642, SD= 27.85656; M=305.4478, SD= 28.70291, respectively).

A Wilks’ Lambda (Wilks’ Λ) multivariate statistic was used to determine the significant difference between attendance on TNReady English/language arts and mathematics scale scores. Obtaining a probability value of less than .05 establishes that the test was significantly significant (Van Aelst & Willems, 2011). As shown in Table 4.3, the Wilks’ Λ revealed a probability score of .974, indicating that there was not a statistically significant difference between attendance on the combined dependent variables, F(2, 128)= .974 p>.005; Wilks’ Λ = .026; partial n²=.000.
Table 4.3

*Multivariate Tests*

<table>
<thead>
<tr>
<th>Effect</th>
<th>Multivariate Tests&lt;sup&gt;a&lt;/sup&gt;</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value</td>
<td>F</td>
<td>Hypothesis df</td>
<td>Error df</td>
<td>Sig.</td>
<td>Partial Eta Squared</td>
</tr>
<tr>
<td>Intercept</td>
<td>Pillai's Trace</td>
<td>.993</td>
<td>9455.131&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>128.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Wilks' Lambda</td>
<td>.007</td>
<td>9455.131&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>128.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Hotelling's Trace</td>
<td>147.736</td>
<td>9455.131&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>128.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Roy's Largest Root</td>
<td>147.736</td>
<td>9455.131&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>128.000</td>
<td>.000</td>
</tr>
<tr>
<td>Attendance</td>
<td>Pillai's Trace</td>
<td>.000</td>
<td>.026&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>128.000</td>
<td>.974</td>
</tr>
<tr>
<td></td>
<td>Wilks' Lambda</td>
<td>1.000</td>
<td>.026&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>128.000</td>
<td>.974</td>
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<td></td>
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<td>128.000</td>
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<td>.026&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.000</td>
<td>128.000</td>
<td>.974</td>
</tr>
</tbody>
</table>

<sup>a</sup> Design: Intercept + Attendance  
<sup>b</sup> Exact statistic

**Summary**

To answer the hypotheses, a one-way MANOVA including outliers and a one-way MANOVA excluding outliers were utilized. The Wilks’ Λ analyses results indicated that the variables did not report a significant difference between the mathematics achievement scores and student attendance, resulting in the rejection of H<sub>a</sub><sub>1</sub> (There is a significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year) and the acceptance of H<sub>o</sub><sub>1</sub> (There is no significant difference between the TN Ready Mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 and those students who were not truant in either year).

Regarding the second hypothesis, each analysis demonstrated a lack of statistical significance between the English/language arts achievement scores and student attendance that
resulted in the rejection of $H_a_2$ (There is a significant difference between the TN Ready English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year) and the acceptance of $H_o_2$ (There is no significant difference between the TN Ready English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 and those students who were not truant in either year).
CHAPTER 5: CONCLUSIONS AND IMPLICATIONS

Introduction

Robert Merton’s Structural Strain Theory (Flynn, 2013; Merton 1938; Merton 1968) and B.F. Skinner’s Operant Conditioning Theory (Skinner, 1953) were utilized as the foundation for this study, highlighting the relationship among student behavior, society’s expectations, reinforcements, and consequences. The Structural Strain Theory identified societal strictures and possible human response to those restrictions. Attendance requirements and assessment mandates are enforced by the Department of Education (D.O.E). In this instance, the D.O.E created specific guidelines for school-age youth. Student attendance patterns are the response to those directives. Student achievement scores are associated with the Operant Conditioning Theory. Students are conditioned to attend school to obtain satisfactory marks on the TNReady achievement tests. The study focused on the result of those relationships by identifying how truancy and academic achievement goals affect the student population.

The study, conducted in a rural-Appalachian school district in south east Tennessee, included 144 participants. Participants’ 2016-2018 attendance data and 2017-2018 TNReady mathematics and English/language arts scale scores were utilized. A data analysis was conducted utilizing a one-way MANOVA, including a Normal Q-Q plot analysis, a box plot to identify univariate outliers, a Mahalanobis distance test, a scatterplot to confirm linearity, a Pearson correlation, and a Wilks’ Lambda (Wilks’ Λ) multivariate statistical test. The initial analysis identified eight outliers. As a result, a MANOVA was conducted, with and without outliers, to allow for statistical comparisons.

The study’s research questions and null hypotheses were:
1. Is there a significant difference between the TN Ready mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year?

H₀₁: There is no significant difference between the TN Ready mathematics achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 and those students who were not truant in either year.

2. Is there a significant difference between the TN Ready English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year?

H₀₂: There is no significant difference between the TN Ready English/language arts achievement scores of students who were truant in the 2016-2017 school year and those students who were not truant in either year.

Conclusions

Discussion of Combined Research Questions and Results with Outliers. This study was designed to answer the question, “Is there a significant difference between the TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year?” The Wilks’ Λ revealed a rejection of the statement that there would be a significant difference between the TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year. To be considered statistically significant, the Wilks’ Λ outcome must have a probability of less than .05.
(Van Alest & Willems, 2011). The study’s data identified the probability value as .405. Due to the probability value being greater than .05, the results indicated a lack of significant difference between the TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year.

**Discussion of Combined Research Questions and Results without Outliers.** Research question one and question two asked “Is there a significant difference between the TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year?” The Wilks’ Λ revealed a rejection of the statement that there would be a significant difference between the TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year. To be considered statistically significant, the Wilks’ Λ outcome must have a probability of less than .05 (Van & Willems, 2011). The study’s data identified the probability value as .974. The probability value was greater than .05, indicating a lack of significant difference between the TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year.

**Implications**

The data analysis revealed that the difference between TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year, and those students who were not truant in
either year were not statistically significant. The lack of statistically significant results may be explained through the study’s delimitations and limitations. The study was delimited to an East Tennessee district public school system with six schools serving students in grades 3-8. The results of this study can only be generalized to school districts with similar demographics and limited sample size. Though the results differed from the literature review, references can still be made utilizing previous studies.

Etkin (2016) and Fishbach and Choi (2012) linked immediate and anticipated incentives to the advancement of long-term goals. Inferences could be made that instant attendance rewards, such as field trips and certificates, when paired with long-term gains, such as high achievement scores or obtaining a high school diploma, create a foundation for meeting and maintaining future college and career readiness goals.

Studies conducted by Woolley and Fishbach (2016) explored the relationship between short-term motivation and long-term goal adherence. A correlation was found among participants’ enjoyment of the activity and their perseverance of New Year’s resolutions. Additionally, the study found that participants’ library study habits were focused more on immediate rewards, than the long-term benefits. While a fifth study found that immediate rewards were more likely to influence behavior than anticipated rewards. These studies have implications for increasing attendance and achievement in school systems.

Research conducted by Easton and Englehard (1982), Caldas’ (1993), and Roby (2004) have shown a correlation between student attendance and achievement. Results indicated a correlation between an increase in attendance and academic achievement improvement. However, these studies focused on average student performance levels and ADA grade levels ranging from 4th to 12th grade, rather than individual student achievement and attendance data.
(Caldas, 1993; Easton & Englehard, 1982; Roby, 2004). These studies indicate a correlation between the conformity to the D.O. E’s attendance mandates and the reward attainment of increased achievement scores.

Literature also identified relationships between types of absences and achievement, highlighting correlations between high unexcused absences and lower academic scores (Gottfied, 2009). Students’ prior attendance history was not a factor in this study, nor were distinctions made between types of absences. A lack of statistically significant findings could be the result of the omission of those factors.

Additional literature reviewed the long-term impact middle school attendance has on high school graduation rates. These studies illustrated the long-term impact of consistent middle school attendance on high school graduation rates. This study identified a relationship between low attendance in 6th grade and low high school graduation. Attention was also directed toward a correlation between poor academic performance and increased disciplinary action (Biroukov, 2016). In this study, a relationship was not found between TNReady mathematics and English/language arts achievement scores and attendance. As the study concentrated on short-term attendance patterns and student achievement, findings may have been impacted by prior student attendance and achievement history.

Furthermore, though the study did not include student motivation as a factor, Cavigilla-Harris (2006) found that when paired with student motivation, absences did not impact grades. The study purported that including attendance creates a bias when estimating student achievement, due to the relationship found between attendance and motivation. Additional results indicated a lack of relationship between mandatory attendance and student achievement.
While Cavigilla-Harris’s (2006) study focused on collegiate students, the results may be applicable to districts attempting to increase student achievement. Measuring the student body’s intrinsic and extrinsic motivational factors may afford greater insight into overall achievement than attendance reports provide. Results indicate the importance of developing a comprehensive understanding of attendance-reward conditioning techniques to ensure lasting success.

The study’s results were not anticipated, when compared to the literature study’s implication that one year of truancy would have an effect on the following year’s achievement scores. However, the study proved to be valuable due to the knowledge gained regarding the research district’s current truancy and achievement components. Increased demands from the federal government and State Department of Education to lower truancy, while improving achievement, will continue to drive research on truancy factors, prevention strategies, and their impact on academic achievement.

**Recommendations**

The study found that, for this Southeastern Appalachian school district, there was no significant difference in TNReady mathematics and English/language arts achievement scores of students who were truant in 2016-17, but not in 2017-2018, and those who were not truant in either year. The study’s findings highlight the need for school districts to enlarge their focus to include contributing factors of attendance and achievement. Just as every student learns in a unique way, so must the district find individualized methods to motivate consistent student attendance.

Upon reviewing the data results, it became clear that continued analysis would benefit the research district. Utilizing components of the Structural Strain Theory and the Operant Conditioning Theory enabled observations to be made and suggest program initiatives designed
to meet the specific needs of the district’s student population. Immediate attention was placed on reviewing previous years’ attendance reports and achievement scores. The purpose was to look for patterns and to identify students who would benefit from unique motivational techniques. Methods for continually monitoring student attendance, reward programs, and increased communication among schools, parents, and the community were also reviewed and evaluated for effectiveness.

Increased communication between schools and stakeholders was identified as an area of need. Suggestions included creating clear attendance policies that identify the requirements and the consequences of truancy. Reference guides that list attendance rules, rewards, and consequences could be distributed to faculty members, students, and parents as a means to maintain consistency and ensure understanding.

Motivational rewards, such as, attendance fieldtrips, prizes, certificates, homework passes, and additional recess time address varying levels of conditioning needed to ensure attendance longevity. Monitoring attendance reports would enable the district to identify strategies that were successful, as well as eliminate those deemed ineffective. These management reports would assist in reducing the financial strain associated with many incentives. Further research could be conducted by surveying students, after graduation, regarding the effects motivators had on their short-term and long-term attendance and achievement goals.

Additionally, recommendations for future research were prompted by the results of this study. Longitudinal studies extending the parameters to include factors such as prior attendance history, behavior, absence rationale, and prior academic performance would be profitable in
developing a more cohesive understanding of the impact short-term truancy has this district’s achievement scores.

Based on the literature review, an extended study identifying the impact of attendance modification strategies would be beneficial. Although the study did not determine a statistically significant difference between the TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year, following the study’s population to determine if short-term attendance does affect long-term academic achievement would be feasible.

Furthermore, a study could be conducted to determine if there is a statistical difference between the TNReady science and social studies scores of truant versus non-truant students. A study of this type would allow the research district to determine which academic areas are impacted the most by truancy. Additional examination of truancy prevention strategies, incentives, and community support need to be conducted to determine if adaptations to current interventions are needed. It would also be beneficial to examine the impact truancy has on academic achievement in surrounding districts, as well as those districts’ truancy intervention plans.

Summary

The study analyzed difference between TN Ready mathematics and English/language arts achievement scores of students who were truant in the 2016-2017 school year, but were not truant in the 2017-2018 school year and those students who were not truant in either year. This study provides beneficial information concerning the research district’s truancy issue and its effect on academic achievement scores. The study could assist the research district’s leaders
pursuing information on the links between attendance and academic achievement, especially when considered in conjunction with the study’s professional literature review.
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