AN ANALYSIS OF TENNESSEE RETENTION RATES FOLLOWING THE ENACTMENT OF THE RETENTION LAW IN TENNESSEE

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March 22, 2017

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Dedication

This dissertation is dedicated to my family. Your unwavering love and support has made this possible, and I am immeasurably grateful.

Abstract

The purpose of this study was to analyze retention rates in Tennessee following the enactment of the Tennessee retention law with a focus on increasing awareness of trends and disparities between ethnicities and genders. Research has shown that retaining students is not beneficial for academic growth, and it leads to students being at risk for graduation. When it comes to retaining students, studies have shown that males and minority students are held back more than females or other ethnicities. The aim of this study was to examine retention rates in Tennessee among three ethnicities (African-American, Caucasian, and Hispanic) and between genders both overall in the state and within the three major divisions (East, Middle, and West). Data were obtained from the Tennessee Department of Education and the Office of Civil Rights Data Collection. Several statistical measures were made in the analysis. All comparisons underwent a test of equal variance, an analysis of variation, and a post hoc comparison. The data revealed statistical differences in overall retention rates, rates between ethnicities, and rates between genders. No clear bias toward any ethnicity was found, but male students were retained more often than females. The findings from this study are beneficial for district and school leaders in developing intervention plans for struggling students in the hopes of reducing retention rates.

Keywords: *retention rates, retention law, disparity, ethnicity, gender, Tennessee*

Table of Contents

List of Tables, Figures, and Illustrations
Tables

Figures

CHAPTER 1

Purpose and Organization

Introduction

Retaining students, or holding them back and not allowing them to progress to the next grade, is a practice found in almost every school in the United States. During the 2015-2016 school year, 18,708 (2%) of total students were retained in Tennessee (Tennessee Department of Education, 2017). Students are held back for a variety of reasons and at all grade levels. On average, about 10 percent of students will be held back at least once in their school career (David, 2008; Gottfried, 2012; Hanover Research, 2013; Jimerson et al., 2006; Shepherd & Smith, 1990; Tingle, Schoeneberger, & Algozzine, 2012; Warren, Hoffman, & Andrew, 2014; Wu, West, & Hughes, 2010). Many of these students have similar characteristics and are considered at-risk for high school graduation (Dombek & Connor, 2012; Hanover Research, 2013; Jimerson et al., 2006; Range et al., 2012; Warren et al., 2014). While retention has been a practice since the 19th century, it has garnered more press recently as many states have passed retention laws. Retention laws require students to demonstrate proficiency before moving on to the next grade (Workman, 2014). This typically occurs at the third-grade level, but does not include students who are receiving special services for learning difficulties. In addition to the laws, policies regarding intervention as a means of support for students struggling with reading and mathematics have been made (Workman, 2014). The effects of retention have been studied since the early 1900s (Owings & Magliaro, 1998). Many of the results are similar and point to

the ineffectiveness and detriment of the practice. However, the laws are in place, and the practice continues. This study aimed to examine retention rates since the passing of the retention laws and implementation of intervention policies.

Background of the Study

Retaining students has been a practice in schools since the mid to late 1800s (Lynch, 2013). Students were required to demonstrate mastery of the content in a written essay before they could continue to the next grade in the 19th century (Lynch, 2013). The focus shifted from content mastery to social promotion in the early 20th century but returned to content mastery in the mid-1990s (Huddleston, 2014). President Bill Clinton urged school leaders to require students pass an exam before moving on to the next grade, and in 2002 the No Child Left Behind legislation was passed (Huddleston, 2014). In 2011, Tennessee passed a mastery law for third grade students (Tennessee Code Annotated 49-6-3115, 2011). The law states, "A student in the third grade shall not be promoted to the next grade level unless the student has shown a basic understanding of curriculum and ability to perform the skills required in the subject of reading as demonstrated by the student's grades or standardized test results" (Tennessee Code Annotated 49-6-3115, 2011). If a student does not demonstrate mastery, then the school must meet with parents to decide on the proper response for the student. Responses include retention, remediation in summer school, or supports for the following year, if other data can show the student's mastery of the content (Workman, 2014). The State of Tennessee also implemented new guidelines addressing the identification of students with a Specific Learning Disability in 2014. The new policy requires that districts use a Response to Instruction and Intervention (RTI[2]) model to qualify students for eligibility for special education under Specific Learning Disability (Tennessee Department of Education, 2015). This new policy requires that students

who are struggling with reading and/or mathematics be placed in a research-based intervention with regular progress monitoring before they can be made eligible for special education identification (Tennessee Department of Education, 2016). This study explored retention rates of all students and specifically third grade students in Tennessee.

Statement of the Problem

Students are held back for a variety of reasons and at all grade levels. Most recently, states have begun passing laws that require students to demonstrate a basic understanding of reading in order to move on to the next grade. There are currently eighteen states, including the District of Columbia, that have retention laws (Huddleston, 2014). There has been an abundance of research that supports the negative effects of retaining students (Gottfried, 2012; Jimerson et al., 2006; Jimerson, Ferguson, Whipple, & Dalton, 2002; Johnson, 1984; Martin, 2011; Owings & Magliaro, 1998; Shepard & Smith, 1990; Tingle et al., 2012; Venable, 2015; Witmer et al., 2006). Most of those studies found a correlation between retaining students, no matter the grade, and higher drop-out rates, low self-esteem, and negative behaviors (Gottfried, 2012; Jimerson et al., 2006; Jimerson, et al., 2002; Johnson, 1984; Martin, 2011; Owings & Magliaro, 1998; Shepard & Smith, 1990; Tingle et al., 2012; Venable, 2015; Witmer et al., 2006). Some studies showed limited positive effects that were short term. Many legislators believed that students are being moved on to the next grade without demonstrating a basic understanding of the content and therefore supported bills that require a demonstration of mastery before promotion in the third grade.

Purpose of the Study

The purpose of this study was to analyze retention rates since the passage of the third-grade retention law in Tennessee. Shepard & Smith (1989) compared the established practice of

retaining students to the age of schooling itself. In the 19th century, students were retained for lack of content mastery (Lynch, 2013). During the earlier part of the 20th century schools began using the concept of social promotion (Lynch, 2013). In 2002, the Elementary and Secondary Education Act was reauthorized and renamed No Child Left Behind (Klein, 2015; United States Department of Education, 2016). The reauthorization brought about a more vigorous approach to accountability for students and schools. In the past eight to ten years several states have brought about legislation that requires students to demonstrate mastery of basic reading skills in the third grade before they can be promoted (Huddleston, 2014). This study examined retention rates of Tennessee students with a focus on gender and three ethnicities, and will add to the current research body on these topics.

Significance of the Study

This study offered the opportunity to gather empirical data on retention rates after the passage of the third-grade retention law in Tennessee. This study will build upon previous studies on retention.

Theoretical Foundation

The work of Pierre Bourdieu and Jean-Claude Passeron served as the theoretical framework for the study. In their book, *Reproduction in Education, Society and Culture* (1977) the authors describe the repeated nature of society. Social classes are expected to pass on their status to future generations, and society is designed to ensure that repetition (Bourdieu & Passeron, 1977; Delouis, 2004). The authors use the example of the working-class society in France to illustrate their point. Society is designed to keep the working class at that level by denying them access to the culture that is dominant (Delouis, 2004). The term, habitus, is used to describe a way of life that is ingrained and never changes (Bourdieu & Passeron, 1977; Delouis,

2004). Delouis goes on to remark that, "Relatively unawares and without following any conscious rule, people of similar social origin share homologous attitudes, categories, and perceptions, and engage in similar practices" (2004, p. 3). For the purposes of mandatory testing by states, designing examinations that require the class to go above and beyond what they inherently know prevents them from succeeding (Bourdieu & Passeron, 1977; Delouis, 2004). This theory was applied to the study by comparing it to the laws requiring proficiency on third-grade reading exams for promotion to the next grade level. In theory, the tests ensure the continuation of the societal norms. Having laws that require demonstrating mastery of a subject, with a penalty of retention for non-mastery, are setting the lower classes up to fail. The most vulnerable students are being subjected to a law that will keep them at a vulnerable state (Boudieu & Passeron, 1977; Delouis, 2004; Huddleston, 2014).

Research Questions

The purpose of this study was to identify what effect, if any, laws regarding mastery of content for promotion have had on retention rates in the state of Tennessee. Retention is a practice that occurs in schools across the United States. The results from this study will add to the current research body on the topic of retention. Three research questions guided the study:

1. Is there a significant difference in overall retention rates since the passage of the Tennessee third-grade retention law in the three Tennessee divisions?
2. Is there a significant difference between African-American, Caucasian, and Hispanic students' retention rates since the passage of the Tennessee third-grade retention law in the three Tennessee divisions?

3. Is there a significant difference between male and female African-American, Caucasian, and Hispanic students' retention rates since the passage of the Tennessee third-grade retention law in the three Tennessee divisions?

Limitations and Delimitations

The limitations of this study included the possibility of districts or the state department not responding to requests for data and not reporting that data correctly to both the State of Tennessee and the federal government for the Civil Rights Data Collection. Also, the data reported to the Office of Civil Rights for the Civil Rights Data Collection occurs every other year (odd years) and is not released to the public at least one year after (United States Department of Education, 2016). A third limitation involved the manipulation of data requested from the Tennessee Department of Education. Per their privacy guidelines, all districts reporting less than 10 were redacted, and no districts were listed in the reports (Data Management, personal communication, February 22, 2017).

Definition of Terms

Adequate Yearly Progress: "The yardstick at the heart of the No Child Left Behind Act. Under the NCLB law, states must test students in math and reading in grades 3-8 and at least once in high school. Schools must report on the performance of different groups of students, such as racial minorities, as well as the student population as a whole. Students are expected to reach annual achievement targets, known as adequate yearly progress, or AYP" (Klein, 2015, n.p.).

CRDC: Civil Rights Data Collection; Data collected on a wide range of topics, including student enrollment and programs/services provided to students in the United States. The data are disaggregated in a number of ways, including sex, race/ethnicity, disability, socioeconomic status, and limited English proficiency (Office of Civil Rights, 2017).

ESSA: Every Student Succeeds Act; The Every Student Succeeds Act (ESSA) was signed into law in 2015 and replaces No Child Left Behind (Chenoweth, 2016; Love, 2016; Weiss & McGuinn, 2016).

Grade Repetition: The act of repeating the current grade during the following school year (Huddleston, 2014).

Intervention: These are academic supports for students not performing as a typical peer based on nationwide reading norms (Tennessee Department of Education, 2015).

Norms: A test score that compares the test taker to an average student is a norm (Tennessee Department of Education, 2015).

Paraprofessional: An adult employed by the school to provide assistance to teachers and students (Klein, 2015).

Response to Instruction and Intervention (RTI^2): A teaching system that uses data to identify students' specific needs and match those needs with appropriate instructional strategies (RTI^2 Family, n.d.).

Social promotion: Allowing students to pass on to the next grade regardless of content mastery at the current grade level (Huddleston, 2014).

Subgroup: "Different groups of traditionally overlooked students, including racial minorities, students in special education, English-language learners, and low-income children. Under the NCLB law, schools must break out results on annual tests by both the student population as a whole, and these "subgroup" students" (Klein, 2015, n.p.)

Organization of the Document

This research was organized into five distinct chapters. Chapter one provides an overview of the study. Background information, the purpose, and the significance of the study are given to

the reader. A description of the theoretical framework is provided along with an outline of the study. Terms are defined, and the research questions are clearly voiced. Chapter one concludes with the limitations and delimitations. A literature review is provided in the second chapter. This review covers historical information on the topic of retention and the beginnings of research on the topic. The literature review provides more detailed information on which students are being retained and when the retention occurs. The review goes on to provide a summary of research on the effects of retention, regardless of when it occurs. The second chapter concludes with possible alternatives to holding a child back in a grade. The third chapter provides the reader with the methodology used for the study. The population, instrument, and data analysis approaches are detailed in this chapter. Chapter Four is a review of the results from the data collected. The final chapter, Chapter Five, provides conclusions from the research study and lists suggestions for possible future studies.

CHAPTER 2

Literature Review

Why Students Are Retained

The grouping of children by grade levels began around 1860 (Owings & Magliaro, 1998). Prior to that, students were taught altogether and moved on to the next level once mastery occurred. In today's schools, many students are retained because they have not met state standards for proficiency in reading (Hanover Research, 2013; Jimerson et al., 2006; Witmer, Hoffman, & Nottis, 2004). This has come as a result of the *No Child Left Behind* act, which focuses on literacy achievement and not mathematics achievement (Hanover Research, 2013; Jimerson et al., 2006; Witmer et al., 2004; Wu et al., 2010). Additional reasons for retaining students include non-mastery of curriculum and social immaturity (Dombek & Connor, 2012; Johnson, 1984; Martin, 2011; Range, Holt, Pijanowski, & Young, 2012; Venable, 2015; Witmer et al., 2004). Martin (2011) suggests that retention is the least intrusive intervention for the school. Many teachers believe that retention should occur in kindergarten or first grades (Range et al., 2012). At the primary grade level teachers do not see the long-term negative effects and sometimes only see the short-term advantage (Martin, 2011; Venable, 2015; Witmer, 2006).

When Students Are Retained

Students can be retained at any grade level. However, the primary grades are where students are more often held back. Teachers in kindergarten and first grade will often recommend holding a student back to allow them time to mature (RAND, 2009). Retention rates for students are highest in first grade (Warren et al., 2014). The next highest grade level to retain is ninth grade (Warren et al., 2014). Regardless of when a student is held back, there is little to no data that support a long-term benefit (RAND, 2009).

Which Students Are Retained

The research of students who are retained shows that male students are most often held back (Dombek & Connor, 2012; Hanover Research, 2013; Jimerson et al., 2006; RAND, 2009; Range et al., 2012; Warren et al., 2014). The data also show that minority students are more likely to be retained with African-American and Hispanic being most likely (Dombek & Connor, 2012; Hanover Research, 2013; Jimerson et al., 2006; RAND, 2009; Range et al., 2012; Warren et al., 2014; Winsler et al., 2012). Retained students are more likely to have multiple academic concerns, including lower grades, higher absenteeism, inattentiveness, and problem behaviors (RAND, 2009). Additionally, students of less educated parents and those living in the South and Northeast are more likely to not pass on to the next grade (Warren et al., 2014). Students who are most at-risk for failure are the ones being retained (Owings & Magliaro, 1998).

Perceptions of Retention

Many teachers retain students because they believe that the additional time will allow them to mature socially and academically (Dombek & Connor, 2012; Hanover Research, 2013; Martin, 2011; Owings & Magliaro, 1998; Range et al., 2012; Venable, 2015; Witmer et al., 2004). Principals report a similar perception that maturity will occur with an additional year of

schooling, and they believe that parent involvement is also an important factor when retaining a student (Range et al., 2012). Range et al. 2012) noted that teachers assumed parents would be more motivated to help their child with schoolwork if the child was retained. School districts acknowledge the need for students to graduate at a reasonable age, and therefore limit the number of times a student may be retained in his/her school career (Venable, 2015; Witmer et al., 2004). Primary teacher's beliefs regarding retention vary somewhat from the beliefs of teachers in upper grades with primary teachers being concerned with student mastery before moving on to the next grade (Hanover Research, 2013; Range et al., 2012; Witmer et al., 2004). Upper grade teachers are supportive of primary teacher's beliefs that retention assist students in later grades (Range et al., 2012; Witmer et al., 2004). Most teachers have based their opinions of retention on previous experiences, peer opinions, and attitudes of colleagues (Dombek & Connor, 2012; Range et al., 2012; Witmer et al., 2004).

Effects of Retention

Retained students rarely show long-term positive academic effects (Gottfried, 2012; Jimerson et al., 2006; Jimerson, Ferguson, Whipple, & Dalton, 2002; Johnson, 1984; Martin, 2011; Owings & Magliaro, 1998; Shepard & Smith, 1990; Tingle et al., 2012; Venable, 2015; Witmer et al., 2006). Gottfried (2012) remarked that students fall behind their classmates when compared to students from their cohort. His findings show that the achievement gap continues to widen between retained and non-retained students more and more with each year. Tingle et al. (2012) looked at students who had been retained in early elementary grades and followed them into high school where they reported poor academic achievement. Martin (2011) indicated through his study that students had a negative self-image when it came to academics and the completion of homework. He also found an increased absence rate which impacted academic

success. Holmes's study realized that the second grade students in the study who had been behind academically, but not retained, later outperformed their counterparts who had been held back (Shepard & Smith, 1989). Many studies have identified other negative effects when looking at grade retention (Hanover Research, 2013; Jimerson et al., 2006; Martin, 2011; Shepard & Smith, 1989; Tingle et al., 2012).

The likelihood that students will not complete high school is higher among students who have been retained than among those who have not (Andrew, 2014; Hanover Research, 2013; Jimerson et al., 2006; Jimerson et al., 2002; Shepard & Smith, 1990; Tingle et al., 2012). Shepard & Smith (1990) discovered that retained students are five times more likely to drop out. Jimerson et al. (2002) concluded that retained students are more likely to have problems with self-esteem and aggressive behaviors which in turn lead to dropping out of high school.

Students who have been retained tend to exhibit more behavioral problems than non-retained students (Hanover Research, 2013; Jimerson et al., 2002; Martin, 2011). The Hanover Research (2013) found that retention affects students peer relationships, attendance, and problem behaviors. Andrew (2014) studied the long-term effects and scarring that followed retained students into high school and beyond into career. Her study showed the continued effect on behaviors and motivation.

Retained students tend to have negative feels about being held back (Shepard & Smith, 1990). Yamamoto and Byrnes (1986) studied issues that stressed students. They found that when students were asked to compare stressful life events, they grouped being retained as second to going blind or losing a parent. The study revealed that students felt they had done something wrong and were being punished by being retained (Yamamoto & Byrnes, 1986).

There has been some evidence that retention may show a temporary improvement in

academic achievement (Venable, 2015; Witmer et al., 2006). Hanover Research (2013) reported some retained students in grades 1 and 2 in California showed short-term academic growth. Wu et al. (2010) also found positive results among first grade students who had been retained and decreased hyperactivity and behavior problems. Dombek & Connor (2012) remark that students who have been retained do tend to receive additional help from the classroom teacher. While these studies do show some positive effects, they insert the caveat that the effects were mostly short-term and not long-term (Hanover Research, 2013; Venable, 2015; Witmer et al., 2006; Wu et al. 2010). Schwerdt & West (2013) showed additional positive effects that lasted through high school from retained students after examining the first cohort of students retained after the passage of the Florida retention law. They do note that along with the retention, students are required to attend summer school, be placed in a classroom with a highly effective teacher for the next school year, and be placed in an intensive intervention with a highly effective teacher (2013).

Elementary and Secondary Education Act (ESEA)

The Elementary and Secondary Education Act (ESEA) is a bi-partisan civil rights law that was signed in 1965 (United States Department of Education, 2016). The law provides funding for a range of educational initiatives for school districts in the United States. The intent of the law was to equalize opportunities for children living in poverty by providing federal dollars to support their educational needs (Chenoweth, 2016). Funding for school initiatives, library books, and scholarships are a few of the benefits of the act (United States Department of Education, 2016). The law has been re-authorized over the past fifty years and renamed in the process. Most notably is the No Child Left Behind law, but most recently, in 2015, it was re-authorized as Every Student Succeeds Act (United States Department of Education, 2016).

No Child Left Behind (NCLB)

The No Child Left Behind (NCLB) law was a re-authorization of the ESEA and signed into effect in 2002 (Klein, 2015; United States Department of Education, 2016). The updated law increased the level of federal involvement in schools and required a new level of accountability for schools and school districts (Klein, 2015). The purpose of the law was to increase the caliber of students so that future generations could compete with international peers. The law specifically addressed closing the proficiency gap between students in certain subgroups (Klein, 2015; United States Department of Education). Some of those subgroups included minority, students in special education, English language learners, and those who are economically disadvantaged (Klein, 2015; United States Department of Education, 2016). NCBL required that students demonstrate proficiency in reading and mathematics in third through eighth grades, and once in high school by the 2013-14 school year (Klein, 2015. States were allowed the autonomy of choosing the testing tool and establishing the criteria for proficiency (Klein, 2015). Adequate Yearly Progress (AYP) was tracked and penalties were levied when benchmarks were not reached (Klein, 2015; United States Department of Education, 2016). The law also required that teachers and paraprofessionals be highly qualified (Klein, 2015). Highly qualified teachers need a bachelor's degree in the subject they were teaching, and paraprofessionals needed at least an associate's degree, two years of college completion, or a passing score on an established teaching skills evaluation (Klein, 2015). Waivers were established in 2011 as an alternative to some requirements of the law and allowed states to create their own education reforms (Klein, 2015). Forty-two states took advantage of the waivers and have established new standards for students (Klein, 2015).

Every Student Succeeds Act (ESSA)

      The Every Student Succeeds Act (ESSA) was signed into law in 2015 and replaces No Child Left Behind (Chenoweth, 2016; Love, 2016; Weiss & McGuinn, 2016). This reauthorization of NCLB reduces the federal mandates affecting education and allows for increased flexibility for states, districts, schools, and educators (Weiss & McGuinn, 2016). ESSA provides states with the autonomy to meet the needs of their districts, and in turn their students (Weiss & McGuinn, 2016). State level agencies are then required to take the lead in five areas (Weiss & McGuinn, 2016). They must first share their plan for success by communicating their vision to stakeholders (Chenoweth, 2016; Weiss & McGuinn, 2016). The vision should be reflective of the needs of the state and result in common goals for student success (Weiss & McGuinn, 2016). States must also implement standards and provide an assessment tool for monitoring academic progress (Chenoweth, 2016; Weiss & McGuinn, 2016). Like NCLB, states are still required to assess students in grades K-8 and once in high school annually (Weiss & McGuinn, 2016). A third expectation of states is that they create an accountability system that complies with ESSA requirements (Chenoweth, 2016; Weiss & McGuinn, 2016). The plan for accountability should align with the vision and goals previously established, in an effort to provide continuity (Weiss & McGuinn, 2016). Proper use of federal funding must also be ensured in order to comply with ESSA requirements (Weiss & McGuinn, 2016). The focus at the state level should be more of assistance and less monitoring for compliance (Weiss & McGuinn, 2016). Finally, states are charged with developing two-way communication systems with the public and stakeholders (Chenoweth, 2016; Weiss & McGuinn, 2016). State agencies must have open doors and ears to stakeholder concerns and feedback (Weiss & McGuinn, 2016). ESSA reduces the role of the federal government and increases state responsibility for educational

program oversight.

Tennessee Retention Law

One offshoot of the NCLB law was the establishment of retention laws in several states. Florida was the first state to enact legislation requiring retention be considered if a student failed to achieve mastery on the state examination in third grade (Huddleston, 2014; Klein, 2015; Robelen, 2012), Since then, eighteen states, including the District of Columbia, have enacted legislation with similar requirements (Klein, 2015). Tennessee passed its legislation in 2011. Students are required to show that they have basic mastery of reading skills at the third grade, as measured by standardized tests or other measures (Tennessee Code Annotated 49-6-3115, 2011). The legislation does allow for exceptions. Students who are receiving research-based interventions and those already receiving special education services in the area of reading are exempt from the law (Tennessee Code Annotated 49-6-3115, 2011; Workman, 2014). Additional alternatives are available as well including summer school (Tennessee Code Annotated 49-6-3115, 2011).

Why Third Grade

Children who have difficulties with reading are likely to struggle throughout their lives (Petrone, 2014). "Children who do not read well are more likely to be retained a grade in school, drop out of high school, become teen parents, or enter the juvenile justice system" (Petrone, 2014, p. 7). For reading, third grade is often referred to as the year when the focus changes from learning to read to reading to learn (Sparks, 2015). The focus shifts to mostly comprehension by fourth grade (Lesnick, et al., 2010; Schwerdt & West, 2013). Additionally, the Anne Casey Foundation found that third grade was a crucial turning point in a child's reading progression, and the National Assessment of Educational Progress found that one sixth of students who were

not proficient readers in third grade did not graduate from high school (Lesnick et al., 2010).

"Children who do not read proficiently by the end of third grade are four times more likely to

leave school without a diploma than proficient readers" (*Early Warning,* 2013, p. 4). These data

are reasons identified by states to pursue retention laws for third grade students (Balkcom, 2014;

Schwerdt & West, 2013).

Alternatives to Retention

Numerous alternatives have been identified to support the struggling learner (Dombek &

Connor, 2012; Jimerson et al., 2006; Jimerson et al., 2002; Lynch, 2013; Shepard & Smith,

1990). Early prevention and classroom intervention programs are identified as a strong

alternative to holding students back (Dombek & Connor, 2012; Jimerson et al., 2006; Jimerson et

al., 2002; Lynch, 2013; Shepard & Smith, 1990). Petrone (2014) states, "Correct identification of

students at risk for reading disability in preschool through first grade can trigger early reading

intervention prior to the onset of significant problems, which in turn can place students on the

path of adequate reading development" (p. 13). David (2008) remarks that interventions may

place the struggling student in the right direction for academic success when neither retention nor

promotion seem appropriate. Dombek & Connor (2012) suggest that more teachers are taking the

time to look at classroom data and make evidence-based decisions. Jimerson et al. (2002) claims

that without these types of programs at-risk students will likely see academic failure and

eventually drop out of school. Jimerson et al. (2006) goes on to predict that preschool

interventions and prevention programs might even prevent retention from occurring in the first

place. After school and summer intervention programs are recommended for preventing retention

as well (Jimerson et al., 2006; Lynch, 2013). These programs provide continuity for students

over a time period that is usually considered to cause a loss of learning. Behavior modification

and instructional strategies are also valuable when it comes to lessening the motives for retaining students (Jimerson et al., 2006). Teachers and students benefit from quality, ongoing professional development for educators. Jimerson et al. writes "When students' needs are addressed, school success will increase" (2006, p. 93).

The practice of holding students back has been researched since the early 1900s with similar results. Much of the research on grade retention indicates a negative impact on student academic achievement and emotional health. Even with this data the practice continues (David, 2008; Range et al., 2012; Tingle et al., 2012). Alternatives are available for educators to consider instead of retention. Taking the time to consider and implement those alternatives could have lasting positive effects on students. This review of literature on retention leads to four questions that compare data between the three divisions in Tennessee: With an increase in classroom interventions and the Response to Instruction and Intervention (RTI[2]) mandate, what effect has RTI[2] had on retention rates?, With the implementation of state laws for third grade reading proficiency, has there been an increase in the number of third grade students retained?, How has the 3rd grade retention law impacted retention rates among Caucasian, Hispanic, and African-American students?, and How has the RTI[2] policy change impacted retention rates among Caucasian, Hispanic, and African-American students?

Conclusion

The practice of retaining students has been occurring in schools for over 150 years. The effects of the practice have been repeatedly studied with the same results. Retaining students is not an effective way to ensure mastery of skills and it almost always has negative effects. Yet, the practice continues and is now a part of education legislation in several states. Tennessee is a state that currently has a law requiring third grade students demonstrate a level of reading

mastery on state examinations. Failure to demonstrate that mastery could result in being held back and not allowed to move on to the next grade. This study examined the impact of the legislation on retention rates in Tennessee.

CHAPTER 3

Methodology

Research Design

A quasi-experimental quantitative comparative study was employed to analyze retention rates of third grade students and retention rates of Kindergarten through twelfth grade students in Tennessee both before and after the passage of the third grade retention law in 2011.

Research Participants and Setting for the Study

This study encompassed data reported from Tennessee school districts and sought to represent the majority of communities, including urban, suburban, and rural. Data were reported to and acquired from the Tennessee Department of Education and the Civil Rights Data Collection from the Office of Civil Rights.

Population

Participants were school districts within the state of Tennessee. There are 143 school districts in Tennessee (Tennessee Department of Education, 2016). Data focused on rates for students, and did address some third-grade retention rates. Information was collected from the state department of education and compared rates between the three divisions (Appendix A) in the state; East, Middle, and West (State of Tennessee, 2017). Additionally, the data focused on comparing retention rates between Caucasian, Hispanic, and African-American students and

male and female students that was collected for the Civil Rights Data Collection for the Office of Civil Rights.

Data Collection Procedures

The data collected for the study were retrieved from the Tennessee Department of Education and the Civil Rights Data Collection web site. A request was then made for data regarding retention rates by grade from the Tennessee Department of Education. The data received from the Tennessee Department of Education reported did not include district names and districts reporting fewer than ten retentions. Specific gender and race data were acquired from the Civil Rights Data Collection, which is a requirement of the Office of Civil Rights (United States Department of Education, 2017).

Instrument

The Tennessee Department of Education and the Civil Rights Data Collection (CRDC) gather data regarding a wide range of topics that impact the civil rights of those being educated (United States Department of Education, 2016). The United States Department of Education has collected data on issues regarding civil rights since 1968 (Office of Civil Rights, 2017). "The CRDC collects a variety of information, including student enrollment and educational programs and services, most of which is disaggregated by race/ethnicity, sex, limited English proficiency and disability" (United States Department of Education, 2016, n.p.). The data are reported in a spreadsheet. This information was not used to identify the specific schools or students but did encompass school districts within the state of Tennessee and allowed for a comparison by division. The State of Tennessee gathers data from Tennessee school districts that report education statistics in an Annual Statistical Report (Tennessee Department of Education, 2017).

Data Analysis

The data used for this study included findings from the Tennessee Annual Statistical Report and the Civil Rights Data Collection from the Office of Civil Rights. The data included all reporting districts in Tennessee and were divided into the three major divisions. Retention rates were converted to percentages for analysis, and each data point represented the percentage of students retained in that district for that ethnicity. For example, the Hispanic retention percentage was a percentage of Hispanic students in a specific district and not the overall population of students. For all analyses a test for equal variances was conducted. The coefficient alpha was calculated for reliability. For those meeting all assumptions, the ANOVA was performed. For those results not meeting the assumption of homogeneity (p value of less than .05), the Welch ANOVA was performed. In some cases, the p value in the multiple comparisons method was greater than $p \geq .05$, but the Levene's method was less than or equal to $p \leq 0.05$. While the sample sizes were greater than 20, the distribution of the population was greatly skewed in either the upper or lower end resulting in the choice to use the Welch ANOVA to avoid a type I error, which is the incorrect rejection of a true null hypothesis (Lomax, 2007; Minitab, 2016). For the purposes of analysis, the significance alpha was set at 0.05. All data were then subjected to a post hoc test to distinguish the differences between the means of the groups (Minitab, 2016). For the data that met the assumption of homogeneity, the Tukey's honestly significant difference (HSD) test was run. Data sets not meeting the assumption of homogeneity were analyzed with the Games-Howell post hoc test (Minitab, 2017).

Question number one looked for a significant difference in overall retention rates since the passage of the law. The data included seven years of rates to capture three years prior to the law and four years after the law. A histogram was used to show the distribution of students

retained in Tennessee over a seven-year period. The histogram was chosen, in part, because of its user-friendly display. The Analysis of Variance (ANOVA) was chosen to determine if there was a statistically significant difference between the means and was chosen over the *t* test to reduce the chance of making a Type 1 error since more than two independent variables were involved.

When considering using the ANOVA, multiple assumptions were taken into consideration. The first assumption considered was that the dependent variable was continuous, or measured at the interval. For question 1, retention rates were the dependent variable and the retention year was the independent variable. For the second assumption, the independent variable should have consisted of two or more categorical, independent groups. The independent variable was the retention year. Assumption three stated that there should have been independence of observations. For question 1, the years are separate and students are not in multiple grades. For assumption four, there should not have been significant outliers. Assumption five assumed that the dependent variable was approximately normally distributed for each category of the independent variable. A histogram was used to determine the normal distribution of scores. The final assumption was that there was homogeneity of variances. This was determined by finding the standard deviation and comparing means with both multiple comparisons and Levene's methods.

Question two, Is there a significant difference between African-American, Caucasian, and Hispanic students' retention rates since the passage of the Tennessee 3rd grade retention law in the three Tennessee divisions?, employed a one-way ANOVA test to measure differences between variables. Student race (African-American, Caucasian, and Hispanic) was identified as the independent variable. Retention rates were identified as the dependent variable. The assumptions considered for question two were similar to question 1, with the additional

consideration for assumption three. The third assumption is that there is independence of observations. The Civil Rights Data Collection allows for only one race designation (ex: African-American, Caucasian, Hispanic, etc.) Students who have multiple races marked in their profile are designated to a category named "Two or more" (Office of Civil Rights, 2017).

For question three, Is there a significant difference between male and female African-American, Caucasian, and Hispanic students' retention rates since the passage of the Tennessee 3rd grade retention law in the three Tennessee divisions?, a one-way ANOVA test was employed to measure differences between the variables. Student gender and race were identified as the independent variables for question three, and retention rates were identified as the dependent variable. The same assumptions were considered for the ANOVA.

CHAPTER FOUR

Results of Data Analysis

Introduction

The act of retaining students who are not making adequate academic progress has been prevalent in the United States since the late 1800s (Lynch, 2013). In 2011, a law was passed in Tennessee that required third grade students show a basic understanding of reading skills on the Tennessee Comprehensive Assessment Program before moving on to the fourth grade (Tennessee Code Annotated 49-6-3115, 2011). The purpose of this study was to examine retention rates in Tennessee since the passage of the third-grade retention law. The analysis aimed to identify trends in retention rates and distinguish significant differences in retention rates between certain ethnicities and gender. Overall retention rates were analyzed from 2009-2015 for both the state and the three major divisions. Gender and ethnicity specific data were analyzed from the Civil Rights Data Collection (CRDC) report for 2009-2013 for both overall rates and third-grade specific rates. The 2015 CRDC data collection will occur in the spring of 2017 and is projected to be reported in 2018 (Office of Civil Rights, 2017). This chapter presents the findings of the study and presents the analysis of the data.

Question One

The goal of the first question was to identify a statistically significant difference in

retention rates since the passage of the retention law. The retention law was passed in 2011 and

went into effect for the 2011-2012 school year (Tennessee Code Annotated 49-6-3115, 2011).

For comparison and context purposes, overall retention rates were included from 2009 to 2015

(Table 4.1). However, analysis for statistically significant differences in means after the passage

of the retention law was for the years 2012-2015. A histogram (Figure 4.1) was employed to

examine normality. These graphs revealed the presence of longer tails indicating a wider

variance in the percentage of students retained. This included all grades, kindergarten to twelfth,

from reporting districts. The test for equal variances revealed a p value of 0.7060, with $p \geq .05$ as

an assumption of equal variance confirming the null hypothesis, H_0: All variances are equal.
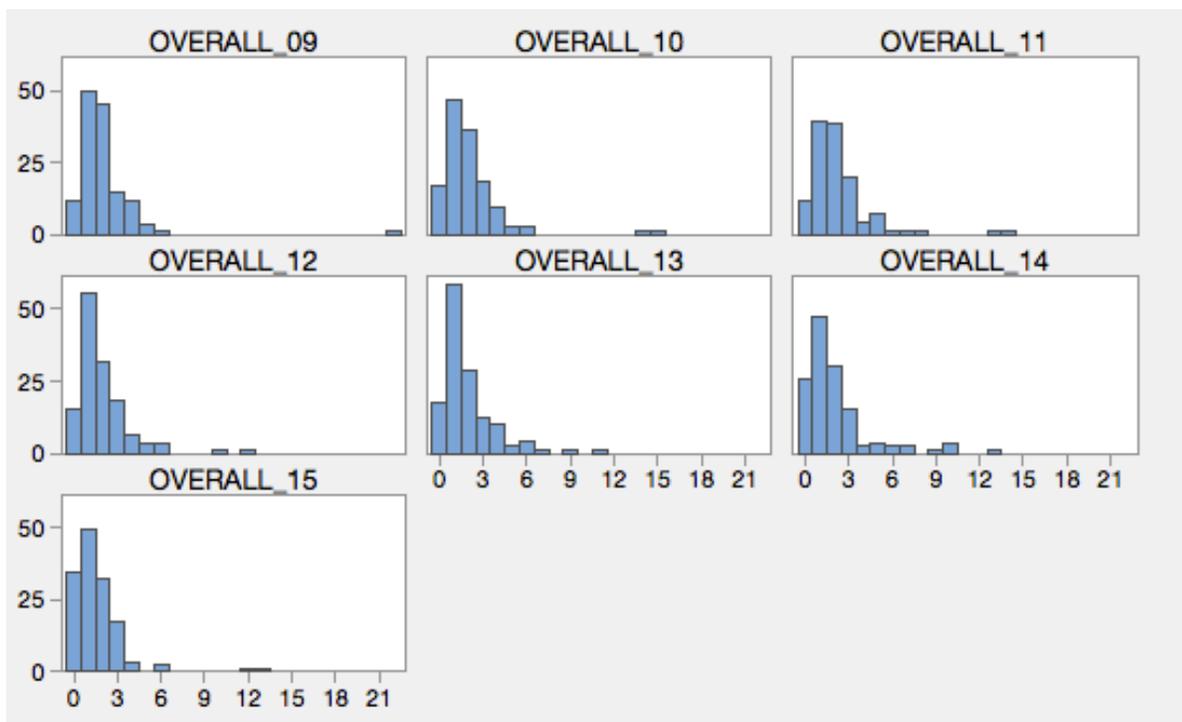
Figure 1. Histogram of Overall Retention Rates (Percentage Retained) K-12 2009-2015

An ANOVA test was conducted to examine mean scores and identify significant

differences between those scores. The highest mean showed in 2011 (*M*=2.1940, *SD*=2.0422),

and the lowest mean occurred in 2015 (*M*=1.5431, *SD*=1.7732). It should be noted that these

years also showed the highest and lowest sample sizes with 2011 having the lowest sample

(N=123) and 2015 having the highest sample (N=139). A Tukey was completed on the means to

further examine the data for significant differences between years. Values of $p \geq 0.05$ would have

indicated a significant difference. This comparison found all years shared a grouping letter.

While the trend indicated a drop in retention rate averages over the seven-year span and after the

implementation of the law, there was not a statistical difference between the rates during the

2012-2015 time period with p=0.3040.

Table 4.1

Overall Retention Rates for Grades K-12 2009-2015

School Year	N	Mean	StDev	95% CI	Grouping
2009	135	2.0167	2.0849	(1.6877, 2.3457)	A
2010	131	2.0145	2.0066	(1.6806, 2.3485)	A
2011	123	2.1940	2.0422	(1.8493, 2.5386)	A
2012	133	1.8449	1.7454	(1.5135, 2.1763)	A
2013	134	1.8863	1.7212	(1.5561, 2.2165)	A
2014	131	1.9337	2.2204	(1.5997, 2.2676)	A
2015	139	1.5431	1.7732	(1.2189, 1.8673)	A

When examining divisional data, retention rates were compared division to division for

the year and, additionally each division was analyzed over the seven-year time-period.

Table 4.2

East Division Retention Rates K-12 2009-2015

School Year	N	Mean	StDev	95% CI	Grouping	
2009	52	2.0852	1.2888	(1.7440, 2.4264)	A	
2010	50	2.1158	1.5320	(1.7678, 2.4638)	A	
2011	49	1.9752	1.4148	(1.6237, 2.3268)	A	
2012	51	1.6092	1.2360	(1.2647, 1.9538)	A	B
2013	50	1.5636	1.1101	(1.2156, 1.9116)	A	B
2014	52	1.4707	1.1869	(1.1295, 1.8120)	A	B
2015	51	1.2258	0.8977	(0.8812, 1.5704)	A	

The analysis of the East K-12 rates from 2009-2015 revealed a steady decrease in the retention

means (Table 4.2) from 2010 (M=2.1158, SD=1.5320) to 2015 (M=1.2258, SD=0.8977).

Table 4.3

Analysis of Variance of Retention Rates East Division 2009-2015

Source	DF	Adj SS	Adj Ms	F-Value	P-Value
Factor	6	35.494	5.91565	3.78	0.0012
Error	348	544.712	1.56526		
Total	354	580.206			

A *p*-value of *p*=0.0012 for 2009-2015 was noted for the East division. Upon examination of the

years following the passage of the retention law, the Games-Howell indicated a significant

difference occurred between 2015 and the previous three years (2012-2014).

Table 4.4

Middle Division Retention Rates K-12 2009-2015

School Year	N	Mean	StDev	95% CI	Grouping
2009	47	1.7742	0.9804	(1.0194, 2.5290)	A
2010	46	1.8863	2.1256	(1.1234, 2.6493)	A
2011	42	2.9406	5.7641	(2.1421, 3.7390)	A
2012	46	1.7887	1.3051	(1.0258, 2.5517)	A
2013	47	2.0923	2.1250	(1.3375, 2.8471)	A
2014	43	1.7999	2.1152	(1.0108, 2.5890)	A
2015	47	1.4614	1.2230	(0.7066, 2.2161)	A

The Middle division (Table 4.4) had means that varied from M=2.9406, SD=5.7641 in 2011 to

M=1.4614, SD=1.2230 in 2015. Again, Table 4.4 contained data from three years prior to the

passage of the retention law for the purposes of establishing context.

Table 4.5

Analysis of Variance of Retention Rates Middle Division 2009-2015

Source	DF	Adj SS	Adj Ms	F-Value	P-Value
Factor	6	57.19	9.53130	1.38	0.2229
Error	311	2150.84	6.91590		
Total	317	2208.03			

Overall, the results showed a p value of $p=0.2229$, which indicated no significant difference in retention rates from 2012-2015. No significant differences of means was found for the Middle division.

The West division results (Table 4.6) showed a decline in retention rates from 2012-2015 with a change in mean of $M=2.2505$, $SD=2.6197$ in 2012 to $M=2.0314$, $SD=2.7820$ in 2015. An increase was shown in 2014 to $M=2.7622$, $SD=3.1375$ from $M=2.0608$, $SD=1.8071$ in 2013. No significant difference in means was observed.

Table 4.6

West Division Retention Rates K-12 2009-2015

School Year	N	Mean	StDev	95% CI	Grouping
2009	36	2.2343	3.5809	(1.3254, 3.1433)	A
2010	35	2.0384	2.4484	(1.1165, 2.9602)	A
2011	33	2.6228	2.6763	(1.6734, 3.5722)	A
2012	36	2.2505	2.6197	(1.3416, 3.1594)	A
2013	37	2.0608	1.8071	(1.1642, 2.9574)	A
2014	36	2.7622	3.1375	(1.8533, 3.6712)	A
2015	41	2.0314	2.7820	(1.1796, 2.8831)	A

Additionally, the difference in retention rates was not significant in the West division (Table 4.7) with a $p=0.8743$.

Table 4.7

Analysis of Variance of Retention Rates West Division 2009-2015

Source	DF	Adj SS	Adj Ms	F-Value	P-Value
Factor	6	18.71	3.11817	0.41	0.8743
Error	247	1893.72	7.66688		
Total	253	1912.43			

Division-to-Division Analysis Post Law.

Comparison for 2012.

A division-to-division comparison was completed for 2012-2015, which were the years

of focus for this study. In 2012, multiple comparison and Levene's methods were performed to

test for equal variance. The *p*-value was noted at $p=0.1958$ for the multiple comparisons method

and $p=0.0604$, with $p \geq 0.05$ not being significantly different. A one-way ANOVA (Table 4.8)

was performed and showed a *p*-value of $p=0.2335$.

Table 4.8

Analysis of Variance of Retention Rates by Division 2012

Source	DF	Adj SS	Adj Ms	F-Value	P-Value
Factor	2	8.900	4.44993	1.47	0.2335
Error	130	393.241	3.02493		
Total	132	402.141			

The Tukey HSD (Table 4.9) showed all letters in the same grouping which indicated no

significant difference in retention rates between divisions for 2012.

Table 4.9

Retention Rates by Division 2012

Division	N	Mean	StDev	95% CI	Grouping
East	51	1.6092	1.2360	(1.1274, 2.0911)	A
Middle	46	1.7887	1.3051	(1.2814, 2.2961)	A
West	36	2.2505	2.6197	(1.6770, 2.8240)	A

Comparison for 2013.

Equal variances were assumed for 2013 data with a *p*-value of $p=0.1045$ for multiple

comparisons and $p=0.1668$ for Levene's method. The one-way ANOVA (Table 4.10) revealed *p*-

value of $p=0.2468$ East, Middle, and West divisions in 2013.

Table 4.10

Analysis of Variance of Retention Rates 2013

Source	DF	Adj SS	Adj Ms	F-Value	P-Value
Factor	2	8.327	4.16333	1.41	0.2468
Error	131	385.670	2.94404		
Total	133	393.997			

Mean values ranged from a low of $M=1.5636$, $SD=1.1101$ in the East division to a high of

$M=2.0923$, $SD=2.1250$ in the Middle division for 2013 (Table 4.11). No significant difference

was found and the null hypothesis, H_0:All means are equal was confirmed for retention rates for

2013 in the three divisions.

Table 4.11

Retention Rates by Division 2013

Division	N	Mean	StDev	95% CI	Grouping
East	50	1.5636	1.1101	(1.0836, 2.0437)	A
Middle	47	2.0923	2.1250	(1.5972, 2.5874)	A
West	37	2.0608	1.8071	(1.5028, 2.6188)	A

Comparison for 2014.

For 2014, the test for equal variance revealed a significant difference between the East and West divisions with $p=0.0183$ for multiple comparisons and $p=0.0088$ for Levene's method resulting in the rejection of the null hypothesis, H_0: All variances are equal. The Welch ANOVA (Table 4.12) was performed and concluded that the p value was met with $p=0.061$.

Table 4.12

Welch's Test for Retention Rates by Division 2014

Source	DF Num	DF Den	F-Value	P-Value
Factor	2	64.2697	2.92	0.061

Table 4.13

Retention Rates by Division 2014, Including Games-Howell Comparisons

Division	N	Mean	StDev	95% CI	Grouping
East	52	1.471	1.187	(1.140, 1.801)	A
Middle	42	1.800	2.115	(1.149, 2.451)	A
West	36	2.762	3.138	(1.701, 3.824)	A

Additionally, the Games-Howell comparison, included in Table 4.13, was completed and indicated no significant difference, with all means sharing a grouping letter. The analysis resolved that the null hypothesis was met. No significant difference was noted in 2014 between the three divisions' retention rates.

Comparison for 2015.

For 2015, the results of the test of equal variance were conflicting with the multiple comparisons method displaying $p=0.0780$ and Levene's method showing $p=0.0192$. To avoid a Type I error, a Welch's ANOVA was performed (Table 4.14).

Table 4.14

Welch's Test for Retention Rates by Division 2015

Source	DF Num	DF Den	F-Value	P-Value
Factor	2	75.4536	1.89	0.158

The Games-Howell Comparisons was run to rule out additional significant differences between

groups. All divisions were found to have the same letter for grouping purposes (4.15). Results

from the analysis determined the n

null hypothesis was met and no significant difference was found between divisions in 2015.

Table 4.15

Retention Rates by Division 2015, Including Games-Howell Comparisons

Division	N	Mean	StDev	95% CI	Grouping
East	52	1.471	1.187	(1.140, 1.801)	A
Middle	42	1.800	2.115	(1.149, 2.451)	A
West	36	2.762	3.138	(1.701, 3.824)	A

Third-Grade Retention Rates.

When comparing retention rates of third-grade students only, the year-to-year data

provided by the Tennessee Department of Education showed only the number of students

retained and omitted district names. Data were limited and means showed an increase in the

spread of rates from 2012-2016 (Table 4.16).

Table 4.16

Statewide Retention Rates Third Grade 2012-2016

School Year	N	Mean
2012	1	0.837783
2013	1	0.771345
2014	1	1.14990
2015	1	1.16389
2016	1	1.01451

The research findings indicated no significant difference in statewide retention rates for the years following the passage of the law. When comparing years within divisions, a significant difference was found in the East between 2015 and the previous three years. However, no significant difference was found in year-to-year comparisons for Middle and West divisions. When the divisions were compared for each year, no significant difference was discovered.

Question Two

The second question resolved whether a significant difference existed in retention rates between African American, Caucasian, and Hispanic students in Tennessee and in the three Divisions since the passage of the retention law. Data for this analysis was acquired from the CRDC reports to the Office of Civil Rights for 2009, 2011, and 2013. Data from the 2015-2016 school year will be collected in the spring of 2017 and is expected to be released to the public in 2018. While the scope of the research questions focuses on retention rates after the passage of the retention law in 2011, the data from 2009 were included to provide additional perspective and analysis. The data reported in this section covered overall K-12 retention rates between the three ethnicities for the reporting year in both the state and within the Division. A test of equal variance was conducted for all analyses and resulted in the rejection of the null hypothesis, H_0: All variances are equal. Therefore, a Welch ANOVA was performed for each data set analyzed

along with a Games-Howell Comparison.

State Rates 2009.

The analysis of 2009 data (Table 4.17) revealed a value of $p=0.001$ after the test for equal variances demonstrated a rejection of the null hypothesis.

Table 4.17

Welch's Test for Retention Rates by Ethnicity 2009

Source	DF Num	DF Den	F-Value	P-Value
Factor	2	142.946	24.07	0.001

The analysis showed a spread in means with the lowest showing $M=0.581$ for Hispanic students to the highest $M=1.730$ for Caucasian students (Table 4.18). African-American students showed a mean of $M=1.140$. Based on the confidence intervals, a low p value ($p=0.001$), and unmatching letters from the Games-Howell Comparison, as shown in Table 4.18, a significant difference was found between Caucasian students and both Hispanic and African-American, but not between Hispanic and African-American students.

Table 4.18

Overall Retention Rates by Ethnicity 2009

Ethnicity	N	Mean	StDev	95% CI	Grouping
Hispanic	197	0.581	1.858	(0.320, 0.842)	B
African-American	191	1.140	2.172	(0.830, 1.450)	B
Caucasian	200	1.730	1.419	(1.533, 1.928)	A

State Results 2011.

The 2011 data revealed a difference with $p=0.001$ for multiple comparisons and $p=0.001$ with Levene's in the test for equal variance. The Welch ANOVA Test (Table 4.19) determined a rejection of the null hypothesis with a $p=0.001$, prompting a Games-Howell Comparison.

Table 4.19

Welch's Test for Overall Retention Rates by Ethnicity 2011

Source	DF Num	DF Den	F-Value	P-Value
Factor	2	151.866	4.22	0.016

Data between groups showed a wide spread of scores with the standard deviation (SD=5.168 for Hispanic students, SD=3.899 for African-American students, and SD=1.2921 for Caucasian students).

Table 4.20

Overall Retention Rates by Ethnicity 2011

Ethnicity	N	Mean	StDev	95% CI	Grouping
Hispanic	248	2.633	5.168	(1.986, 3.279)	A
African-American	244	2.629	3.899	(2.138, 3.121)	A B
Caucasian	248	1.8152	1.2921	(1.6536, 1.9769)	B

Mean results for Hispanic and African-American students showed M=2.633 and M=2.629 respectively and M=1.8152 for Caucasian students. The Games-Howell Comparison (Table 4.20) grouping showed a significant difference between Hispanic and Caucasian students but not between the other groups resulting in a rejection of the null hypothesis that no significant difference exists.

State Results 2013.

The data from 2013 showed a rejection of the equal variance null hypothesis with p=0.004 on multiple comparisons and p=0.001 on the Levene's method. The Welch ANOVA results (Table 4.21) showed p=0.001.

Table 4.21

Welch's Test for Overall Retention Rates by Ethnicity 2013

Source	DF Num	DF Den	F-Value	P-Value
Factor	2	379.193	6.86	0.001

Standard deviations ranged from *SD*=1.1668 for Caucasian students to *SD*=7.887 for African-American students. The Games-Howell Comparison (Table 4.22) found a significant difference between Caucasian and African-American students mean scores, and therefore the null hypothesis was rejected.

Table 4.22

Overall Retention Rates by Ethnicity 2013

Ethnicity	N	Mean	StDev	95% CI	Grouping
Hispanic	266	2.142	4.515	(1.597, 2.687)	A B
African-American	262	3.076	7.887	(2.117, 4.035)	A
Caucasian	267	1.5389	1.1668	(1.3983, 1.6795)	B

Overall Retention Rates by Ethnicity in Divisions 2009.

The analysis of data also included an examination of the three ethnic groups within a division for each reporting year. For 2009 (Table 4.23), in the East division, a significant difference was found when examining the *p* value (*p*=0.001). The Middle division also showed a significant difference with *p*=0.001. The West division displayed no significant difference with *p*=0.139.

Table 4.23

Welch's Test for Overall Divisional Retention Rates by Ethnicity 2009

Source	Division	DF Num	DF Den	F-Value	P-Value
Factor	East	2	142.946	24.07	0.001
Factor	Middle	2	127.500	16.61	0.001
Factor	West	2	90.6524	2.01	0.139

Further testing was conducted to identify significant differences between ethnicities within the division (Table 4.24). For purposes of clarification a subscript was added to the letter to assist with grouping of letters by division. In the East division a statistically significant difference was found between the means of Caucasian (M=2.031, SD=1.403) students and both Hispanic (M=0.567, SD=1.439) and African-American (M=0.671, SD=1.496) students, therefore rejecting the null hypothesis. The Games-Howell Comparison found in the Middle division that a statistically significant difference of means occurred between Caucasian (M=1.687, SD=1.458) and Hispanic (M=0.492, SD=0.989) only. Again, the null hypothesis was rejected. A Games-Howell Comparison was completed with the West division as well and revealed no significant difference in means, which resulted in the acceptance of the null hypothesis.

Table 4.24

Overall Divisional Retention Rates by Ethnicity 2009- All Divisions

Ethnicity	Division	N	Mean	StDev	95% CI	Grouping
Hispanic	East	73	0.567	1.439	(0.232, 0.903)	B_1
African-American	East	71	0.671	1.496	(0.317, 1.025)	B_1
Caucasian	East	74	2.031	1.403	(1.706, 2.356)	A_1
Hispanic	Middle	70	0.492	0.989	(0.257, 0.728)	B_2
African-American	Middle	66	1.053	1.735	(0.627, 1.480)	A_2 B_2
Caucasian	Middle	72	1.687	1.458	(1.345, 2.030)	A_2
Hispanic	West	54	0.713	2.942	(-0.090, 1.516)	A_3
African-American	West	54	1.863	3.070	(1.025, 2.700)	A_3
Caucasian	West	54	1.376	1.320	(1.016, 1.736)	A_3

Overall Retention Rates by Ethnicity in Divisions 2011.

The analysis of 2011(Table 4.25) divisional data revealed significant differences in p values for the three ethnicities in all divisions; East (0.016), Middle (0.011), and West (0.005).

Table 4.25

Welch's Test for Overall Divisional Retention Rates by Ethnicity 2011

Source	Division	DF Num	DF Den	F-Value	P-Value
Factor	East	2	151.866	4.22	0.016
Factor	Middle	2	127.500	16.61	0.011
Factor	West	2	116.694	5.47	0.005

An analysis of the 2011 retention rates by ethnicity in each division (Table 4.26) revealed statistically significant differences. In the East division a significant difference was found between Hispanic and Caucasian students, as revealed by the Games-Howell Comparison and the p value ($p=0.016$). The Games-Howell Comparison noted that no significant difference was found between Caucasian and African-American students or between African-American and Hispanic students, although the Caucasian student mean ($M=1.959$, $SD=1.374$) was lower than Hispanic student mean ($M=3.423$, $SD=5.794$) and African-American student mean ($M=2.743$, $SD=4.464$). The Middle division data revealed a significant difference ($p=0.011$) between Hispanic and Caucasian students and between African-American and Caucasian students. In both cases, the mean of Caucasian students ($M=1.914$, $SD=1.128$) was lower than the means of Hispanic students ($M=2.883$, $SD=5.219$) and African-American students ($M=2.966$, $SD=3.630$). A value of $p=0.005$ was found for the West division, which showed a significant difference in means. A Games-Howell Comparison showed no significant difference between Hispanic and African-American students. However, a statistically significant difference was found between Caucasian students and both Hispanic and African-American students.

Table 4.26

Overall Divisional Retention Rates by Ethnicity 2011- All Divisions

Ethnicity	Division	N	Mean	StDev	95% CI	Grouping
Hispanic	East	102	3.423	5.794	(2.285, 4.561)	A_1
African-American	East	101	2.743	4.464	(1.862, 3.624)	A_1 B_1
Caucasian	East	102	1.959	1.374	(1.689, 2.229)	B_1
Hispanic	Middle	92	2.883	5.219	(1.802, 3.964)	A_2 B_2
African-American	Middle	89	2.966	3.630	(2.201, 3.730)	A_2
Caucasian	Middle	92	1.914	1.128	(1.680, 2.148)	B_2
Hispanic	West	72	3.499	6.000	(2.089, 4.909)	A_3
African-American	West	73	2.664	2.945	(1.977, 3.351)	A_3
Caucasian	West	73	1.717	1.436	(1.382, 2.052)	B_3

Overall Retention Rates by Ethnicity in Divisions 2013.

Data analysis for 2013 yielded a variety of results. The application of Welch's ANOVA

(Table 4.27). for the East division revealed $p=0.055$ requiring the determination that no

statistically significant difference existed between the ethnicities. Analysis for the Middle

division found similar results with $p=0.156$. Results from the West division found $p=0.005$ when

comparing means from the three ethnicities. This significant difference amounted to a rejection

of the null hypothesis.

Table 4.27

Welch's Test for Overall Divisional Retention Rates by Ethnicity 2013

Source	Division	DF Num	DF Den	F-Value	P-Value
Factor	East	2	159.808	2.95	0.055
Factor	Middle	2	132.186	1.88	0.156
Factor	West	2	114.616	5.62	0.005

Further analysis of the data searched for significant differences between ethnicities within each

division. The Games-Howell Comparisons (Table 4.28) indicated a significant difference had

occurred between African-American students ($M=3.318$, $SD=7.101$) and Caucasian students

(*M*=1.563, *SD*=1.237). The African-American group from the East division displayed both a

high mean and standard deviation (*M*=3.318,*SD*=7.101). The comparison found that all

ethnicities fell within the same grouping for the Middle divisions. The West division comparison

found a statistically significant difference between African-American (*M*=2.731, *SD*=3.297) and

Caucasian (*M*=1.532, *SD*=1.085) students. No significant difference was found when comparing

Hispanic and African-American students nor between Hispanic and Caucasian students.

Table 4.28

Overall Divisional Retention Rates by Ethnicity 2013- All Divisions

Ethnicity	Division	N	Mean	StDev	95% CI	Grouping
Hispanic	East	102	1.605	2.594	(1.095, 2.114)	A_1 B_1
African-American	East	100	3.318	7.101	(1.908, 4.727)	A_1
Caucasian	East	102	1.563	1.237	(1.320, 1.806)	B_1
Hispanic	Middle	90	2.622	6.555	(1.250, 3.995)	A_2
African-American	Middle	87	1.977	3.297	(1.275, 2.680)	A_2
Caucasian	Middle	91	1.517	1.163	(1.275, 1.759)	A_2
Hispanic	West	74	2.299	3.407	(1.510, 3.088)	A_3 B_3
African-American	West	74	2.731	3.297	(1.967, 3.495)	A_3
Caucasian	West	74	1.532	1.085	(1.281, 1.783)	B_3

Statewide findings showed a significant difference in means between ethnic groups for

each of the three reporting years. The comparison by division also found significant differences

between ethnic groups. The highest retention mean was shared among the three ethnicities over

the three reporting years.

Question Three

Question three explored the possible existence of significant differences between males

and females in the three ethnicities at both the state and divisional level for the three reporting

years. Each analysis began with the test of equal variance. Results that showed a rejection of the

null hypothesis that all variances were equal were then subjected to the Welch ANOVA and the

Games-Howell Comparison. In the case of question three, all analyses underwent the Welch and Games-Howell.

Overall Retention Rates by Gender and Ethnicity 2009.

The first analysis examined overall statewide retention rates for 2009. When comparing the six groups, the Welch ANOVA (Table 4.29) comparison of means found $p=0.001$, indicating a significant difference in means.

Table 4.29

Welch's Test for Overall Retention Rates by Gender and Ethnicity 2009

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	266.825	15.25	0.001

The spread of mean scores (Table 4.30) over the six groups ranged from a low of $M=0.461$, $SD=2.139$ for Hispanic females to a high of $M=2.245$, $SD=1.561$ for Caucasian males. The Games-Howell Comparison indicated significant differences between several of the groups; Hispanic females ($M=0.461$, $SD=2.139$) were significantly different from Caucasian females ($M=1.216$, $SD=1.216$), African-American males ($M=1.528$, $SD=2.651$), and Caucasian males ($M=2.245$, $SD=1.561$). African-American females ($M=0.756$, $SD=1.476$) were significantly different from Hispanic females ($M=0.461$, $SD=2.139$) and Caucasian males ($M=2.245$, $SD=1.561$). Caucasian males ($M=2.245$, $SD=1.561$) were significantly different from Hispanic males ($M=0.697$, $SD=0.697$), Caucasian females ($M=1.216$, $SD=1.216$), African-American females ($M=0.756$, $SD=1.476$), and Hispanic females ($M=0.461$, $SD=2.139$). No significant difference occurred between African-American females, Caucasian females, Hispanic males, and African-American males. Additionally, no significant difference was noted between African-American and Caucasian males. Overall, the null hypothesis of equal means was rejected.

Table 4.30

Overall Retention Rates by Gender and Ethnicity 2009

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	97	0.461	2.139	(0.029, 0.892)	C
African-American Female	96	0.756	1.476	(0.457, 1.055)	B C
Caucasian Female	100	1.216	1.216	(1.010, 1.421)	B
Hispanic Male	100	0.697	0.697	(0.392, 1.003)	B C
African-American Male	95	1.528	2.651	(0.988, 2.068)	A B
Caucasian Male	100	2.245	1.561	(1.935, 2.555)	A

Overall Retention Rates by Gender and Ethnicity 2011.

The Welch's ANOVA for 2011 calculated a *p*-value of $p=0.001$, which suggests a

significant difference occurred between the means for the groups tested.

Table 4.31

Welch's Test for Overall Retention Rates by Gender and Ethnicity 2011

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	344.985	11.94	0.001

Post hoc analysis with Games-Howell (Table 4.32) indicated areas of significant differences and

similarities between the groups. A significant difference was recorded between Caucasian

females ($M=1.5307$, $SD=0.9945$) and Hispanic ($M=3.620$, $SD=5.648$) and African-American

($M=3.211$, $SD=3.639$) males. No significant difference was found between the other groups.

Table 4.32

Overall Retention Rates by Gender and Ethnicity 2011

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	133	2.893	5.640	(1.926, 3.861)	A B C
African-American Female	130	2.372	3.924	(1.691, 3.053)	A B C
Caucasian Female	133	1.5307	0.9945	(1.3601, 1.7013)	C
Hispanic Male	133	3.620	5.648	(2.651, 4.589)	A B
African-American Male	133	3.211	3.639	(2.587, 3.835)	A
Caucasian Male	134	2.221	1.490	(1.966, 2.476)	B C

Overall Retention Rates by Gender and Ethnicity 2013.

An analysis of data with Welch's ANOVA for 2013 recognized a significant difference

between means with $p=0.001$.

Table 4.33

Welch's Test for Overall Retention Rates by Gender and Ethnicity 2013

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	340.879	8.62	0.001

The Games-Howell Comparison (Table 4.34) found a significant difference between Caucasian

females ($M=1.2342$, $SD=0.8880$) and African-American males ($M=3.125$, $SD=5.001$). No

significant difference was found between the other tested groups.

Table 4.34

Overall Retention Rates by Gender and Ethnicity 2013

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	134	2.252	5.189	(1.366, 3.139)	A B
African-American Female	131	3.027	9.993	(1.300, 4.754)	A B
Caucasian Female	134	1.2342	0.8880	(1.0824, 1.3859)	B
Hispanic Male	132	2.031	3.726	(1.389, 2.672)	A B
African-American Male	131	3.125	5.001	(2.260, 3.989)	A
Caucasian Male	133	1.846	1.326	(1.618, 2.074)	A B

Overall Retention Rates by Gender and Ethnicity East Division 2009.

Retention rates by gender and ethnicity were analyzed for each division in each reporting year. The Welch ANOVA results for 2009 in the East division found $p=0.001$ indicating a significant difference had occurred.

Table 4.35

Welch's Test for Overall Retention Rates by Gender and Ethnicity East Division 2009

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	97.3732	16.70	0.001

Analysis using Games-Howell Comparison (Table 4.36) found a significant difference between Caucasian females ($M=1.521$, $SD=1.077$) and Caucasian males ($M=2.541$, $SD=1.516$). Caucasian males ($M=2.541$, $SD=1.516$) were also significantly different from African-American males ($M=0.943$, $SD=1.763$), Hispanic males ($M=0.865$, $SD=1.830$), African-American females (M=0.406, $SD=1.145$), and Hispanic females ($M=0.262$, $SD=0.790$). Additionally, the comparison indicated a significant difference between Caucasian females ($M=1.521$, $SD=1.077$) and both Hispanic ($M=0.262$, $SD=0.790$) and African-American ($M=0.406$, $SD=1.145$) females.

Table 4.36

Overall Retention Rates by Gender and Ethnicity East Division 2009

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping	
Hispanic Female	36	0.262	0.790	(-0.005, 0.529)		C
African-American Female	36	0.406	1.145	(0.019, 0.794)		C
Caucasian Female	37	1.521	1.077	(1.162, 1.880)	B	
Hispanic Male	37	0.865	1.830	(0.254, 1.475)	B	C
African-American Male	35	0.943	1.763	(0.337, 1.548)	B	C
Caucasian Male	37	2.541	1.516	(2.035, 3.046)	A	

Overall Retention Rates by Gender and Ethnicity Middle Division 2009.

The Welch ANOVA (Table 4.37) results for the Middle division in 2009 revealed a *p-*

value of $p=0.001$. Since falling below the $p \geq 0.5$ threshold, a significant difference was indicated, so post hoc testing was warranted.

Table 4.37

Welch's Test for Overall Retention Rates by Gender and Ethnicity Middle Division 2009

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	93.0273	8.09	0.001

The Games-Howell Comparison was employed for the Middle division 2009 data and revealed several groups where the letters were different, thus indicating a significant difference had occurred. Hispanic females ($M=0.365$, $SD=0.902$), Caucasian females ($M=1.194$, $SD=1.074$), and Caucasian males ($M=2.181$, $SD=1.631$) were significantly different from one another causing a rejection of the null hypothesis that all means were equal.

Table 4.38

Overall Retention Rates by Gender and Ethnicity Middle Division 2009

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	34	0.365	0.902	(0.051, 0.680)	C
African-American Female	33	0.734	1.273	(0.283, 1.185)	B C
Caucasian Female	36	1.194	1.074	(0.831, 1.557)	B
Hispanic Male	36	0.613	1.063	(0.253, 0.972)	B C
African-American Male	33	1.373	2.070	(0.639, 2.107)	A B C
Caucasian Male	36	2.181	1.631	(1.629, 2.732)	A

Overall Retention Rates by Gender and Ethnicity West Division 2009.

Initial testing of retention rates by gender and ethnicity for the West division in 2009 (Table 4.39) indicated a significant different with a p-value of $p=0.009$ using the Welch ANOVA.

Table 4.39

Welch's Test for Overall Retention Rates by Gender and Ethnicity West Division 2009

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	69.3797	3.35	0.009

To lessen the chances of a Type I error occurring, the post hoc comparison (Table 4.40) using

Games-Howell was used. This comparison revealed that all groups shared the same letter. All

groups having the same letter indicated that there was not a significant difference between the

groups, and the null hypothesis was accepted.

Table 4.40

Overall Retention Rates by Gender and Ethnicity West Division 2009

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	27	0.845	3.848	(-0.677, 2.368)	A
African-American Female	27	1.249	1.945	(0.480, 2.019)	A
Caucasian Female	27	0.826	0.802	(0.509, 1.143)	A
Hispanic Male	27	0.581	1.672	(-0.080, 1.242)	A
African-American Male	27	2.476	3.827	(0.962, 3.990)	A
Caucasian Male	27	1.926	1.511	(1.328, 2.524)	A

Overall Retention Rates by Gender and Ethnicity East Division 2011.

Retention rates by gender and ethnicity were compared for the East division in 2011,

which was the year the retention law took effect. The Welch ANOVA (Table 4.41) revealed a *p*-

value of *p*=0.004.

Table 4.41

Welch's Test for Overall Retention Rates by Gender and Ethnicity East Division 2011

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	129.081	3.68	0.004

Further analysis (Table 4.42), using the Games-Howell Comparison, revealed that all groups

shared the same letter. No significant differences were found among mean scores for the six

groups in the East division in 2011.

Table 4.42

Overall Retention Rates by Gender and Ethnicity East Division 2011

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	51	3.308	6.230	(1.555, 5.060)	A
African-American Female	50	2.490	4.806	(1.124, 3.856)	A
Caucasian Female	51	1.622	0.967	(1.350, 1.894)	A
Hispanic Male	51	3.538	5.383	(2.024, 5.052)	A
African-American Male	51	2.990	4.134	(1.828, 4.153)	A
Caucasian Male	51	2.295	1.627	(1.838, 2.753)	A

Overall Retention Rates by Gender and Ethnicity Middle Division 2011.

The *p*-value (Table 4.43) for Middle division retention rates by ethnicity and gender for

2011was calculated at *p*=0.001.

Table 4.43

Welch's Test for Overall Retention Rates by Gender and Ethnicity Middle Division 2011

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	116.669	4.79	0.001

The Games-Howell Comparison (Table 4.44) indicated a significant difference had occurred

between the mean scores of Caucasian females (*M*=1.557, *SD*=0.857) and both Caucasian males

(*M*=2.271, *SD*=1.256) and African-American males (*M*=3.231, *SD*=3.156). The null hypothesis,

H$_0$: All means are equal, was rejected.

Table 4.44

Overall Retention Rates by Gender and Ethnicity Middle Division 2011

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	46	2.077	2.919	(1.210, 2.944)	A B
African-American Female	44	2.694	4.077	(1.454, 3.933)	A B
Caucasian Female	46	1.557	0.857	(1.302, 1.811)	B
Hispanic Male	46	3.689	6.725	(1.692, 5.686)	A B
African-American Male	45	3.231	3.156	(2.283, 4.180)	A
Caucasian Male	46	2.271	1.256	(1.898, 2.644)	A

Overall Retention Rates by Gender and Ethnicity West Division 2011.

The Welch's ANOVA for the West division in 2011 of retention rates by gender and ethnicity found a *p*-value of *p*=0.002 (Table 4.45). Further testing was completed to rule out a Type 1 error.

Table 4.45

Welch's Test for Overall Retention Rates by Gender and Ethnicity West Division 2011

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	95.4909	4.22	0.002

A significant difference was found between two groups using the Games-Howell comparison (Table 4.46). Caucasian females (*M*=1.368, *SD*=1.186) and African-American males (*M*=3.490, *SD*=3.534) were found to have a statistically significant difference in means. All other groups shared letters in grouping, and were therefore determined to not be significantly different from one another.

Table 4.46

Overall Retention Rates by Gender and Ethnicity West Division 2011

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	36	3.35	7.23	(0.91, 5.79)	A B
African-American Female	36	1.815	1.877	(1.180, 2.450)	A B
Caucasian Female	36	1.368	1.186	(0.966, 1.769)	B
Hispanic Male	36	3.647	4.559	(2.105, 5.190)	A B
African-American Male	37	3.490	3.534	(2.312, 4.669)	A
Caucasian Male	37	2.057	1.587	(1.528, 2.586)	A B

Overall Retention Rates by Gender and Ethnicity East Division 2013.

Two years after the retention law was enacted, the data for the East division (Table 4.47) revealed a significant difference in mean scores with *p*-value of $p=0.011$ for gender and ethnicity data groups.

Table 4.47

Welch's Test for Overall Retention Rates by Gender and Ethnicity East Division 2013

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	131.138	3.11	0.011

However, upon post hoc testing with the Games-Howell Comparison, no significant difference was found between retention rates for genders and ethnicities for 2013 in the East division. The null hypothesis was accepted.

Table 4.48

Overall Retention Rates by Gender and Ethnicity East Division 2013

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	51	1.473	2.826	(0.678, 2.268)	A
African-American Female	50	4.71	15.72	(0.25, 9.18)	A
Caucasian Female	51	1.265	0.906	(1.011, 1.520)	A
Hispanic Male	51	1.736	2.360	(1.072, 2.400)	A
African-American Male	51	3.845	6.506	(2.015, 5.675)	A
Caucasian Male	51	1.861	1.445	(1.455, 2.268)	A

Overall Retention Rates by Gender and Ethnicity Middle Division 2013.

The *p*-value was calculated for the Middle division retention rates for 2013 (Table 4.49) and indicated a significant difference of *p*=0.008.

Table 4.49

Welch's Test for Overall Retention Rates by Gender and Ethnicity Middle Division 2013

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	113.086	3.34	0.008

Again, the post hoc testing with Games-Howell Comparison (Table 4.50) suggested no significant difference had occurred between the groups with all groups sharing the same letter.

Table 4.50

Overall Retention Rates by Gender and Ethnicity Middle Division 2013

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping
Hispanic Female	46	2.80	7.77	(0.49, 5.11)	A
African-American Female	44	1.607	2.298	(0.908, 2.306)	A
Caucasian Female	46	1.141	0.811	(0.900, 1.382)	A
Hispanic Male	44	2.440	5.060	(0.902, 3.979)	A
African-American Male	43	2.356	4.070	(1.104, 3.609)	A
Caucasian Male	45	1.902	1.339	(1.500, 2.304)	A

Overall Retention Rates by Gender and Ethnicity West Division 2013.

The analysis of retention rates for the West division in 2013 (Table 4.51) also found a *p*-value of *p*=0.008, which indicated a significant difference had occurred between the means of the groups.

Table 4.51

Welch's Test for Overall Retention Rates by Gender and Ethnicity West Division 2013

Source	DF Num	DF Den	F-Value	P-Value
Factor	5	96.1577	3.32	0.008

The Games-Howell Comparison confirmed that a significant difference had occurred between Caucasian females (*M*=1.307, *SD*=0.967) and African-American males (*M*=3.026, *SD*=3.280). With this significant difference, the null hypothesis was rejected.

Table 4.52

Overall Retention Rates by Gender and Ethnicity West Division 2013

Ethnicity/Gender	N	Mean	StDev	95% CI	Grouping	
Hispanic Female	37	2.649	3.378	(1.523, 3.775)	A	B
African-American Female	37	2.437	3.332	(1.326, 3.548)	A	B
Caucasian Female	37	1.307	0.967	(0.985, 1.629)		B
Hispanic Male	37	1.949	3.445	(0.801, 3.098)	A	B
African-American Male	37	3.026	3.280	(1.932, 4.119)	A	
Caucasian Male	37	1.757	1.161	(1.370, 2.144)	A	B

Significant differences were found between ethnicities and genders for all reporting years and in comparisons by division.

Summary

The data from this study were used to determine if a significant difference had occurred between in overall retention rates since the passage of the Tennessee retention law. Data were collected from the Tennessee Department of Education and Office of Civil Rights for all

Tennessee school districts. The data included retention rates for ethnic groups (African-American, Caucasian, and Hispanic) were examined using multiple measures, including an analysis of gender, to identify significant differences. The data underwent multiple tests including tests for equal variance (multiple comparison and Levene's method), analysis of means (ANOVA and Welch ANOVA), and post hoc testing with Games-Howell and Tukey HSD.

CHAPTER FIVE

Conclusions, Implications, Recommendations

Introduction

Examining retention rates in Tennessee since the passage of the retention law in 2011 was the focus of this study. At the time of this study, Tennessee was one of sixteen states, and the District of Columbia, which had implemented retention laws for students based on state testing results. For this study, retention rates were acquired from the Tennessee Department of Education and the Office of Civil Rights Data Collection site. The data included three years of retention rates prior to the passage of the law for context purposes. The data received from the Tennessee Department of Education had been redacted to omit district names and rates of less than ten, per their privacy policy. Reporting categories for CRDC data included ethnicities and gender.

Three research questions guided this study. Question one, Is there a significant difference in overall retention rates since the passage of the Tennessee third-grade retention law in Tennessee and the three Tennessee divisions?, aimed to identify differences and possible trends in data over the past seven years. Question two, Is there a significant difference between African-American, Caucasian, and Hispanic students' retention rates since the passage of the Tennessee third-grade retention law in Tennessee and in the three Tennessee divisions?, sought to explore

differences between three ethnicities. Finally, question three, Is there a significant difference between male and female African-American, Caucasian, and Hispanic students' retention rates since the passage of the Tennessee third-grade retention law in Tennessee and in the three Tennessee divisions?, was focused on the differences between the genders within the three ethnicities. All data were subjected to multiple measures to fully evaluate the rates and avoid a Type I analysis error.

Discussion of Conclusions

Question One

The null hypothesis for question one was that no significant difference existed in the overall retention rates for the years following the enactment of the retention law within the state and within each division. Multiple tests, including a test for the analysis of variance (ANOVA) and Tukey's HSD, found that no significant difference occurred in the overall state retention rates following the enactment of the retention law. Question one also required analysis of each region for that time-period. Tukey's HSD analysis discovered a significant difference had occurred in retention rates in the East division between 2015 and the previous years. No significant difference occurred for the Middle and West divisions, with all years sharing the same letter on the post hoc Tukey's HSD test for each division. The analysis went further and compared the divisions for each year after the implementation of the law. Results for all four years (2012, 2013, 2014, and 2015) showed no significant difference between the divisions for each of those years. The analysis of question one concluded with an observation of third grade retention rates for 2012-2016. The data provided was limited and yielded only the opportunity to acknowledge that an increase in the spread of rates had occurred over the time-period.

Question Two

The second research question focused on retention rates for three ethnicities, including African-American, Caucasian, and Hispanic. Data for these rates came from the CRDC, which collects data every two years, so the reporting years of 2009, 2011, and 2013 were included in this study. Reporting of these data was delayed by several years. The data reports for 2013 were released in the fall of 2016. However, this data collection included rates for each district by ethnicity and gender, and allowed for the analysis of state divisions for these categories. Gender was addressed in research question three.

The analysis first looked at statewide results. For 2009, a significant difference occurred between the retention rates of Caucasian students and both African-American and Hispanic students. Results for 2011 revealed an increase in the mean of Hispanic and African-American students, but a decline in the mean of Caucasian students. A statistically significant difference was noted between Caucasian students and Hispanic students following the Welch ANOVA and Games-Howell. Data from 2013 again showed an increase in the mean of African-American students and a decline in Hispanic and Caucasian students. A statistically significant difference was found between African-American and Caucasian students' retention rates, only.

The analysis of question two then examined the three ethnicities within each division for each reporting year. For 2009, a significant difference was found for both the East and Middle divisions but not the West. The East division showed a significant difference between some groups with Caucasian students having a larger mean than both African-American and Hispanic students. The Middle division showed a significant difference between Caucasian and Hispanic students. The West division showed no significant difference between the ethnicities.

Results from 2011 showed a significant difference in all divisions. The East division

showed a reversal of rates with Hispanic students having a higher mean than Caucasian students, which resulted in a significant difference. No significant difference was found between African-American students and the other two ethnicities. The Middle division found African-American students with the largest mean and significant difference from Caucasian students. The West division noted a significant difference between Caucasian students as compared to Hispanic and African-American.

The data from 2013 showed the East division having a significant difference between African-American and Caucasian students. The Middle division found no significant differences between the three ethnicities. Like the East, the West division showed a significant difference between African-American and Caucasian students, but no difference between Hispanic students and the other groups.

In general, the three groups alternated in exhibiting the highest retention rate means. Caucasian students went from having the highest means in 2009 to the lowest in 2013. Hispanic students showed the lowest means in 2009, the highest in 2011, and fell in the middle in 2013. African-American students maintained means in between the two other ethnicities until 2013 when their means became the highest. The data analysis for question two would suggest that no bias occurred consistently against a specific ethnicity over the data collection period.

Question Three

The third question made a closer examination at the possibly significant differences between ethnicities and genders overall in the state and within the three divisions. Data from 2009 were included to provide a broader range of time and context for retention rates prior to the enactment of the retention law. Overall retention rates for 2009 found significant differences in rates between several groups. Hispanic females displayed the lowest mean and were significantly

different from Caucasian females, African-American males, and Caucasian males. African-American females showed a significant difference from Hispanic females and Caucasian males. Caucasian males, who had the highest mean, were significantly different from Hispanic males, Caucasian females, African-American females, and Hispanic females. The results from 2011 showed a statistically significant difference between Caucasian females and both Hispanic and African-American males. Overall, Hispanic males had the highest mean, and Caucasian females had the lowest. Additionally, Caucasian males were significantly different compared to African-American males. Statewide data from 2013 revealed a significant difference between Caucasian females and African-American males.

Analysis of the 2009 data for the East division found a significant difference in retention rates between Caucasian males and Caucasian, African-American, and Hispanic females. Caucasian males were also had significant differences between both African-American and Hispanic males. Additionally, a significant difference was present between Caucasian females and both African-American and Hispanic females. When examining the Games-Howell Comparison, no significant difference was found between African-American and Hispanic females.

Significant differences were found between Caucasian males and all other groups except African-American males in the Middle division for 2009. Hispanic females were also significantly different when compared to Caucasian females. African-American males did not display a statistically significant difference from any other group. The Games-Howell Comparison for the West division in 2009 found no significant difference between any groups with all sharing the same grouping letter.

Data from 2011 in the East division revealed no significant difference in retention rates

with all groups sharing a letter in the Games-Howell Comparison. The Middle division revealed a significant difference between Caucasian females and both African-American and Caucasian males. No difference was found between African-American and Caucasian males, specifically. The West division found a significant difference between Caucasian female and African-American male retention rates, with the males being twice that of females.

The data from 2013 found that both the East and Middle divisions had no significant difference when their groups were compared. The West division uncovered a significant difference between African-American males and Caucasian females. All other groups displayed no significant difference in retention rates.

The trend from the data reviewed in question three showed that female students had a lower mean than their male counterparts in all divisions over the three years represented and thus tended to be retained at a lower rate. The analysis of gender found a similar result to the analysis in question two of ethnicity where no consistent bias occurred against a specific ethnicity over the three data collections.

Implications

Research has shown that students who are retained are more at-risk for dropping out of high school than those who have not been held back (Dombek & Connor, 2012; Hanover Research, 2013; Jimerson et al., 2006; Range et al., 2012; Warren et al., 2014). It is also known that minority students are at a higher risk for retention with African-American and Hispanic students having the highest retention rates (Dombek & Connor, 2012; Hanover Research, 2013; Jimerson et al., 2006; RAND, 2009; Range et al., 2012; Warren et al., 2014; Winsler et al., 2012). While Tennessee retention data from 2009 showed Caucasian students, males especially, with a higher retention rate, that trend shifted in 2011 and 2013 with Hispanic and African-

American students being held back more. With respect to the data examined in this study, the following implications are presented for consideration.

IMPLICATION 1: Hispanic and African-American students are at a much higher risk of being held back than their counterparts (Dombek & Connor, 2012; Hanover Research, 2013; Jimerson et al., 2006; RAND, 2009; Range et al., 2012; Warren et al., 2014; Winsler et al., 2012). Divisional analysis showed means reaching a high of $M=2.437$, $SD=3.332$ for African-American females in 2013 and $M=3.026$, $SD=3.280$ for African-American males. Conversely, Caucasian females had a retention mean of $M=1.307$, $SD=0.967$ and Caucasian males $M=1.757$, $SD=1.161$. Concentrated efforts should be made to identify and address the differences between the ethnicities and then develop approaches to provide interventions for struggling students.

IMPLICATION 2: The number of Hispanic students who have been retained has increased steadily since 2009. English Language Learner policies, practices, and programs should be audited for addressing the issue of retention among these students.

IMPLICATION 3: A preponderance of research shows that boys are retained more often than girls (Dombek & Connor, 2012; Hanover Research, 2013; Jimerson et al., 2006; RAND, 2009; Range et al., 2012; Warren et al., 2014). The results from this study supported that claim. District and school leaders should closely monitor student progress and develop intervention programs that specifically address struggling male students.

IMPLICATION 4: The standard deviations for some groups indicated a large variation in retention rates. Those districts with higher rates than the mean should examine their performance as compared to other districts in the state, region, and with similar demographics.

Recommendations

This study focused on the retention rates of students over the past seven years since the

enactment of the retention law. Analysis of the rates showed some significant differences over the years and between ethnicities and gender. Further studies should focus more deeply on why some of these significant differences are occurring. For example:

- The inconsistency in the rankings of the different ethnicities mean scores from 2009-2013 should be more deeply explored to identify the reasons for Hispanic rates fluctuating from the lowest, to the highest, and then the middle, or why Caucasian rates have decreased and African-American rates have increased.

- Further analysis of groups, including socioeconomic status would provide better insight into the reasons for poor academic performance within certain groups.

- A study focused on district leaders' knowledge of where they are ranked within the division and the state for retention rates would provide insight on awareness.

- A study of school leaders that focused on the retention decision and awareness of retention research would provide more insight around this topic.

- Regarding retention rates for 2016 and the decrease in mean from the previous year, additional investigation into the role that statewide testing, or the lack thereof, played in retention rates for that year would be informative.

- The role intervention, particularly Response to Instruction and Intervention (RTI^2), has had on retention decisions would add to the body of knowledge.

- Retention rates for Hispanic students doubled and tripled in some cases over the three data collection years. The correlation between the increase of Hispanic students in Tennessee school districts and the increase in retention rates should be explored.

Summary

Retaining students has shown negative academic and social effects in research studies for

decades. Studies have shown male students are retained more than females, and African-American and Hispanic students are retained more than other ethnicities. The findings in this study support those earlier discoveries with significant differences shown in retention rates in Tennessee over the past four years for ethnicities and genders. District and school leaders have a responsibility to their students and parents to examine their practices and policies when it comes to retaining students. Interventions should be developed to address the needs of struggling students and the disparities in retention rates.

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Appendix

Appendix A

Major Divisions of Tennessee

Major Divisions in Tennessee

East	Middle	West
Anderson	Bedford	Benton
Bledsoe	Cannon	Carroll
Blount	Cheatham	Chester
Bradley	Clay	Crockett
Campbell	Coffee	Decatur
Carter	Davidson	Dyer
Claiborne	DeKalb	Fayette
Cocke	Dickson	Gibson
Cumberland	Fentress	Hardeman
Grainger	Franklin	Hardin
Greene	Giles	Haywood
Hamblen	Grundy	Henderson
Hamilton	Hickman	Henry
Hancock	Houston	Lake
Hawkins	Humphreys	Lauderdale
Jefferson	Jackson	Madison
Johnson	Lawrence	McNairy
Knox	Lewis	Obion
Loudon	Lincoln	Shelby
Marion	Macon	Tipton
McMinn	Marshall	Weakley
Meigs	Maury	
Monroe	Montgomery	
Morgan	Moore	
Polk	Overton	
Rhea	Perry	
Roane	Pickett	
Scott	Putnam	
Sevier	Robertson	
Sullivan	Rutherford	
Unicoi	Sequatchie	
Union	Smith	
Washington	Stewart	
	Sumner	
	Trousdale	
	Van Buren	
	Warren	
	Wayne	
	White	
	Williamson	
	Wilson	