

**THE IMPACT OF DEPARTMENTALIZATION ON THIRD GRADE
TCAP READING AND MATHEMATICS STUDENT ACHIEVEMENT PERCENTILE
SCORES BETWEEN TWO MIDDLE TENNESSEE METROPOLITAN
TITLE I ELEMENTARY SCHOOLS**

Erika McCraw

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TCAP READING AND MATHEMATICS STUDENT ACHIEVEMENT PERCENTILE
SCORES BETWEEN TWO MIDDLE TENNESSEE METROPOLITAN TITLE I
ELEMENTARY SCHOOLS

A Field Study
Presented to
The College of Graduate Studies
Austin Peay State University
In Partial Fulfillment
Of
Requirements for the Degree
Educational Specialist

Erika McCraw

December, 2014

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By

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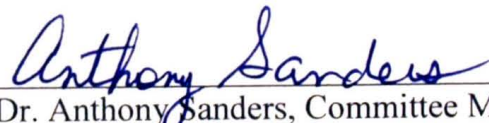
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December 2014
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DEDICATION

This field study is dedicated to my wonderful husband, Logan McCraw, who helped with the baby and housework, while I was busy doing schoolwork. Thank you for the sacrifices that you made during the writing of this field study.

This project is also dedicated to my son, Jesse William. May you pursue what you want to be and let nothing hold you back. To my late grandparents, who inspired me to continue in my studies, and to my mother who modeled for me what it meant to pursue an education at all costs, thank you.

ACKNOWLEDGEMENTS

I would like to thank my chair, Dr. J. Gary Stewart, for the time he spent guiding and directing me throughout the writing of this field study. I would also like to thank Dr. Donald Luck and Dr. John McConnell for helping me understand statistics. Additionally, I would like to thank my friends who were a huge support throughout all of the assignments. It has been a pleasure working alongside you. Next, I would like to thank the superintendent for allowing me to conduct research at the school district.

Lastly, I would like to thank GOD for giving me the strength to complete this field study. When I got overwhelmed with the demands of a full-time job and newborn baby, HE was there to empower me and give me strength and grace.

ABSTRACT

ERIKA L. MCCRAW. "The Impact of Departmentalization on Third Grade TCAP Reading and Mathematics Student Achievement Percentile Scores between Two Middle Tennessee Metropolitan Title I Elementary Schools (Under the direction of DR. J. GARY STEWART).

This study analyzed whether or not there was a statistically significant difference in Reading and Mathematics for Tennessee Comprehensive Assessment Program (TCAP) achievement percentile scores among third grade students in a Middle Tennessee Metropolitan Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize. The data analyses of the TCAP data between two schools were examined using two tests. The homogeneity of variance was supported using the Levenes test. A *t*-test for normalcy was also used to ensure that the kurtosis did not skew the results. The Null Hypotheses were tested and analyzed at the alpha level of significance, $p < .05$.

Results of this study indicated that there was no statistically significant difference in the Reading and Mathematics TCAP percentile scores among the third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize. The results of the study also indicated that there was no statistically significant difference in the Reading and Mathematics TCAP percentile scores among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize. Additionally, there was no statistically significant difference in the Mathematics TCAP percentile scores among third grade females between a Title I elementary school that

departmentalized and a Title I elementary school that did not departmentalize. Lastly, there was no statistically significant difference in the Reading TCAP percentile scores among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.

However, the study did indicate that there was a statistically significant difference in TCAP Reading achievement percentile scores among third grade females between a Title I elementary School that departmentalized and a Title I elementary school that did not departmentalize. The females from the non-departmentalized school scored higher than girls in the departmentalized school. The study indicated that there was a statistically significant difference in the Mathematics TCAP percentile scores among Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize. Minority students from the departmentalized school had higher Mathematics TCAP percentile scores than Minority students from the Title I elementary school that did not departmentalize.

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CHAPTER I

INTRODUCTION

Statement of the Problem

The No Child Left Behind Legislation (NCLB) of 2001 (National Education Association, 2014) has placed pressure on teachers and students to perform in order to meet Annual Yearly Progress (AYP). Tennessee has expanded considerable efforts at raising students' scores, to reflect that Tennessee is competitive with other states in the country. Among the pressure to perform, is the reality that there are students who are at a disadvantage to make the appropriate academic gains. Title I funds, therefore, have been made available to schools with a significantly low-income student population (U.S. Department of Education, 2014b). These funds help provide disadvantaged students with programs and resources that can help them achieve the necessary gains needed to meet Annual Yearly Progress.

With this focus, testing has become increasingly important and at the center of educators thinking and lives, especially those in Title I Schools. In the Clarksville-Montgomery County Schools, principals are working diligently to ensure that quality teachers are hired and retained, in order to provide students with the very best education. While best practices are being implemented, some schools have even adopted departmentalization to aide in this endeavor so they can better utilize teachers' abilities and, ultimately, improve student achievement. According to Chan and Jarman (2004), "students are likely to benefit from departmentalization since they are exposed to the expertise of more than one teacher" (p. 1).

Purpose of the Study

Some Title I schools have shifted to departmentalization in their upper elementary grades. It is important to look at Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics student achievement data to determine if departmentalization, in fact, had a positive affect on student achievement percentile scores. The purpose of this field study was to determine whether or not departmentalization had a positive impact on Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics student achievement percentile scores among third grade students in a Middle Tennessee metropolitan Title I elementary school. The independent variable was the implementation of departmentalization in a Title I elementary school in a Middle Tennessee metropolitan school district and the dependent variables were the Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics student achievement scores using percentiles. Third grade percentile scores for Tennessee Comprehensive Assessment Program Reading and Mathematics in a Title I elementary school that implemented departmentalization were compared to Tennessee Comprehensive Assessment Program Reading and Mathematics percentile scores in a Title I elementary school where departmentalization was not implemented. Both sets of data were used to analyze and determine whether or not departmentalization had a significant affect on student Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics student achievement percentile scores.

The population for this field study was third grade students in two Clarksville-Montgomery County Title I elementary schools. The study compared student Tennessee Comprehensive Assessment Program Reading and Mathematics percentile scores from a

Title I elementary school that departmentalized for third grade and another Title I elementary school that did not departmentalize. The study included Reading and Mathematics Tennessee Comprehensive Assessment Program percentile scores among females and males as well as Minority students and Caucasian students. Special Education students along with the gifted students and the English Language Learners were mixed throughout the aforementioned subgroups.

Significance of the Study

The research committee in the Clarksville-Montgomery School district in which the field study was conducted, will benefit from this study. They will be able to use the information gathered from the data to make informed decisions about implementing departmentalization in third grade, in particular, throughout the district. They will be able to determine whether there was a correlation between higher percentile scores among the school that departmentalized, as opposed to the school that did not departmentalize. The research committee will also be able to determine how males and females, as well as Minority students and Caucasian students compared based on whether they were part of an elementary school that used departmentalization or an elementary school that did not utilize departmentalization.

Research Questions

The following research questions were generated at the outset of this study and were used to formulate the null hypotheses:

1. Is there a statistically significant difference in the Tennessee Comprehensive

- Assessment Program (TCAP) student achievement percentile scores in Reading among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
2. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
 3. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
 4. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
 5. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
 6. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?

7. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
8. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?

Null Hypotheses

The following null hypotheses were formulated based on the research questions and the need to determine the impact departmentalization in one elementary school had on Tennessee Comprehensive Assessment Program percentile scores when compared to the scores from a non-departmentalized elementary school:

1. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
2. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
3. There will be no statistically significant difference in the Tennessee Comprehensive

Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.

4. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores Mathematics among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
5. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores Reading among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
6. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
7. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
8. There will be no statistically significant difference in Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.

Limitations

The following limitations are appropriate for this study based on the demographics and the data used for the study:

1. In this study, there were only two Title I schools considered. Other schools in the district would have benefited by comparing their data between schools that departmentalized and those that did not.
2. The study did not consider teachers' previous experience and expertise in the subject area in which they taught.
3. Only one tool (Tennessee Comprehensive Assessment Program) was utilized to measure student percentiles in Reading and Mathematics to determine the impact of departmentalization.
4. Not all sub-groups were described in this study. The study only took into consideration the impact of departmentalization on gender and between Minority students and Caucasian students.
5. An in-depth study, identifying the impact on all sub-groups, would have been more thorough and perhaps would have yielded more significant findings.
6. The Tennessee Comprehensive Assessment Program data were taken from only one school district.

Assumptions

The following assumptions were made concerning this study and have been identified as being relevant in this study:

1. All students performed to the best of their abilities on the Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics tests from the year that the data were collected.
2. All the teachers taught to the best of their ability, regardless of their areas of expertise or their previous experience.
3. Teachers had the same number years of experience and were equally effective in their instructional strategies.
4. Students who took the Tennessee Comprehensive Assessment Program (TCAP) in Reading and Mathematics remained with the same teacher from the beginning of the school year until the time of the testing.
5. The teachers were not mobile throughout the school year and remained with the same students.
6. The Tennessee Comprehensive Assessment Program Reading and Mathematics Assessment tests were given in the same format and order.
7. Students experienced the state mandated test administration procedures as outlined by the State of Tennessee within an appropriate and acceptable environment.
8. Students received the appropriate instruction in self-contained and departmentalized classes as outlined by Tennessee State Standards and Framework.
9. Students' responses to questions on state tests accurately reflected the understanding of each individual.

10. Teachers received the same training of the effective way to implement departmentalization.

Definition of Terms

The following terms have been identified for providing clarification or a definition that is appropriate to how they are used in this study:

1. **No Child Left Behind (NCLB):** In January of 2001, President George Bush signed the No Child Left Behind Act. This act reauthorized and amends federal education programs established and the Elementary and Secondary Education Act. Schools must demonstrate that students are meeting state standards and close the achievement gaps between sub-groups (National Education Association, 2014b).
2. **Annual Yearly Progress (AYP):** Under No Child Left Behind (NCLB), schools and school districts in Tennessee are measured on whether students meet performance-based benchmarks in Reading and Mathematics (U.S. Department of Education, 2014b).
3. **Tennessee Comprehensive Assessment Program (TCAP):** A state-wide assessment given to measure student's skills and progress in reaching state standards (Tennessee Department of Education, 2014).
4. **Percentile Scores:** Refers to the performance of elementary school students as measured through TCAP and as identified in the performance test scores among all students in Tennessee (U.S. Department of Education, 2014a).

5. **Title I School:** A school with a high percentage of children from low-income families that receives financial assistance to support students in order to meet challenging state standards (U.S. Department of Education, 2014a).
6. **Departmentalization:** A school format where students receive instruction from different teachers who teach different subjects (McGrath & Rust, 2002).
7. **Platooning:** A term that is synonymous with departmentalization: Classes, in which, students are taught all subjects by the same teacher (Hood, n.d.).
8. **Race to the Top:** The process by which states implement reforms that target the improvement of low-performing schools in an effort to improve student achievement. It also involves implementing programs that will retain highly qualified teachers and prepare students to contribute to the global economy (U.S. Department of Education, 2014c).
9. **Minority:** Any student belonging to the ethnic groups of African-American, Hispanic, Native/Alaskan or Asian/ Pacific Islander (U.S. Department of Education, 2014a).
10. **Caucasian:** Any student not belonging to the ethnic groups of African-American, Hispanic, Native/Alaskan or Asian/ Pacific Islander (U.S. Department of Education, 2014a).
11. **Economically Disadvantaged:** Any student that qualifies for free or reduced lunch, based on family income (U.S. Department of Education, 2014a).

CHAPTER II

REVIEW OF THE LITERATURE

No Child Left Behind

Being an educator is not as easy or simple as it once was. There is intense pressure for both teachers and students to perform in order to be competitive with other nations. No Child Left Behind was implemented in order to hold the nation accountable in the field of education (NEA, 2014). The purpose of No Child Left Behind legislation was to help close achievement gaps among all students (U.S. Department of Education, 2014b).

With the pressure of No Child Left Behind legislation, educators are looking for ways to improve their instructional methods and strategies in any way possible, in an effort to maximize student academic performance on state mandated tests. Their performance on these tests must demonstrate that they are actually meeting state mandated academic performance levels in all areas listed. While teachers know that a single test cannot accurately showcase a student's depth of knowledge, it is what is used to determine student growth and academic performance of schools throughout the country (U.S. Department of Education, 2014b).

Race To the Top

Although No Child Left Behind was passed by Congress and implemented throughout the United States, educators quickly realized that there were a plethora of problems that came along with this legislation. Numerous factors were not considered prior to the implementation of No Child Left Behind of 2001 (NEA, 2014). Under the

current administration of President Barak Obama, a new law was proposed and passed that was intended to alleviate the stress that No Child Left Behind had unintentionally created. The Race to the Top initiative awarded Tennessee grant money in order to provide programs that the state would need to help successfully meet students' needs. The grant money allowed the state to set its own goals in order to close the achievement gap between all student sub-groups in a more realistic way (U.S. Department of Education, 2014d).

The State of Tennessee was selected among the initial groups of schools designated to be First to the Top (U.S. Department of Education, 2014c). Tennessee continues with its plan to close the achievement gaps and prove that Tennessee is able to compete with the rest of the nation, as well as the world. This drive to be First to the Top is continuing to drive instruction every day. Teachers need to continue to reflect on best practices and innovative methodologies that will enable students to reach their potential.

Regardless of their official designations, state testing instruments are intended to hold teachers accountable for what they are teaching. Therefore, the methodologies that teachers employ in their classrooms should be analyzed and evaluated. Each year, administrators seek to hire and retain high quality teachers who focus on quality standards-based instruction that create a high-quality learning environment (Beecher & Sweeney, 2008).

Title I Schools

While the drive to become the First To The Top has been at the forefront in the media, and also in the minds of Tennessee educators, the disadvantages that come with

living in low-income areas, has made educators realize that there is still additional work facing them in the years ahead. Along with the pressure to perform, is the reality that there are students who are at a disadvantage to make the appropriate achievement gains. Title I funds, therefore, have been made available to schools with a significantly lower income student population (U.S. Department of Education, 2014a). These funds help provide these disadvantaged students with programs and resources that can help them achieve the necessary gains needed.

With Title I funding, comes the responsibility and accountability to use the money in ways that meet state guidelines. Teacher positions have been created in order to work with students who are low-performing in efforts to help raise student achievement scores.

Background and Overview

Teachers must teach more effectively and target their efforts towards helping all students reach their highest potential. While best practices have been adopted, classroom structure has now drawn the attention of educators. While departmentalization has been traditionally the accepted organizational structure in middle and high school settings throughout the American education landscape, elementary teachers, who typically teach in self-contained settings, are wondering if this classroom structure would be beneficial in the earlier grades. Deciding on the most effective structure at the elementary level has been debated by educators and administrators for quite sometime according to McGrath and Rust (2002). Research highlights the advantages and disadvantages of this approach.

Self-containment, the most common elementary level class structure, is where one teacher teaches all subjects and is with the same students all day. Departmentalization is

generally when a teacher teaches or specializes in one specific content area, such as Mathematics or Reading, and students rotate into their classroom on a set schedule, much like American high schools have been traditionally structured. Departmentalization can also include teachers who teach English-Language Arts along with Social Studies or Mathematics with Science. In this particular format, students must rotate to different classrooms to be taught by various teachers in order to be taught all the subjects. Traditionally elementary schools have used the self-contained model.

Although many schools have adopted this classroom structure for their upper elementary grades, Stevens (2004) had some concerns. When implementing something new, caution must be taken. Stevens (2004) noted that sometimes a change within a school is simply a trend, as opposed to a scientific process, where data supports its effectiveness. When a school adopts a certain class structure there should be research validating its effectiveness, so that time and resources are not wasted.

There is research available that supports the premise that all too often administrators and school boards buy into new or innovative programs at the mere suggestion or perception that the new program or teaching methodology can raise students test scores. Departmentalization must be carefully examined before the wholesale implementation in elementary schools. First, the concept or organizational structure must be thoroughly examined and a determination that there is research and data that support the notion that departmentalization is effective before any implementing efforts are made. This should be conveyed to the staff. Joyce (2004) believed that although an idea may be good, there should be supporting evidence which leads teachers to accepting the organization as viable prior to any implementation. This is the only way

that any new program or structure can be successful. All too often teachers are left on their own to implement new programs or teaching methodologies. The program or organizational structure loses the effectiveness had there been research supporting their effectiveness of the program and also the necessary support and scaffolding along the way to help teachers troubleshoot any concerns or problems that may arise.

Advantages of Departmentalization

Departmentalization is becoming more and more popular among elementary schools as teachers want to use their resources and time wisely. They want to work smarter, not necessarily harder.

Research suggests that a number of advantages are associated with departmentalization at the elementary level. According to Chan and Jarman (2004), one advantage of departmentalization is increased student flexibility and adaptability. Students change classrooms, which allow students to learn to become more flexible and adaptable to different teachers, and more independent. Adapting to different teachers and different classrooms will be essential as students learn to adapt to the very same organization structure when they transition to middle school and later to high school as well. As departmentalization is implemented in the upper elementary grades, it will help students have a smooth transition to the next phase of their education.

Another advantage to departmentalization is that it allows teachers to become specialists in a certain subject area (Chan & Jarman, 2004). A teacher usually has a preference for one or two subject areas. Gardner (1991), who is responsible for the Multiple Intelligences Theory, stressed the importance of teaching to the child's strengths

based on their natural tendencies, thus multiple intelligences. The same can be said of teachers. If teachers are going to succeed and reach their fullest potential, they should have the same opportunities to teach in a content area in which they feel comfortable or are competent; a subject that they are naturally drawn to or gravitate toward. This will increase a teacher's success and productivity.

Teachers will most likely want to teach a subject in which they feel competent and one they enjoy. Therefore, teacher retention should improve, according to Chan and Jarman (2004). It is sensible to postulate that when teachers teach a subject or subjects they do not enjoy, they tend not to want to continue to teach at that level or in the content area they do not enjoy. When teachers are interested in what they are teaching, they tend to invest considerably more energy and time in being successful and can easily focus on what they are doing.

Teacher Efficacy

A teacher's excitement for a subject is readily apparent to students and that excitement is translated into excitement and increased learning on the part of the students. When considering departmentalization, teacher qualifications must be considered. In order to insure student success and increase the likelihood that these teachers work to their fullest potential, they should be carefully selected so that they teach subjects in which they are highly qualified, as well as possessing a keen interest in teaching that subject. If a teacher is assigned to teach a subject that he or she does not enjoy or have an interest in, then there is likely to be a severe lack of motivation to succeed or excel.

Albert Bandura (1986), an educational theorist, suggested that if a teacher is confident, then she would perform more effectively. If they harbor a perception of themselves that they are competent, then they will perform to that level. Competent teachers are the goal of every school; therefore, it would appear that a classroom structure that allows a teacher to focus on one area and become a master teacher in the subject would benefit the teacher and the students as well.

Robin Henson (2001) conducted a study, which provides research data supporting this point. He was involved in a study that focused on teachers in a large school district in the Southwestern United States. This study showed that those who viewed themselves as capable teachers in a certain area, were enabled and encouraged to endeavor to become more effective in their instruction. This ultimately benefits students, as their learning is supported.

Henson (2001) agreed that student performance on standardized tests is linked to how teachers perceive themselves. Competent teachers will teach with confidence, which will make them more effective instructors. Students are perceptive and they will be more receptive to teachers who view themselves with confidence, regardless of the grade level.

Ackerlund (1959) also agreed that teacher interest and aptitude have an impact on her effectiveness as a teacher. The higher the interest in a subject, the greater the motivation a teacher will have to study and present the materials in the more effective ways; ways that will increase the changes that students will understand the concepts and subject matter. The result becomes meaningful lessons that have application to real-life situations.

To validate his theory, Ackerlund (1959) surveyed a school district in Quakertown, Pennsylvania. A survey was given to teachers inquiring about training in the areas of knowledge of subject and methods of teaching. 109 teachers expressed that self-contained classrooms were the best organizational structure and 122 expressed opposite perceptions or beliefs. The majority of the teachers surveyed did not believe that self-contained classrooms were advantageous for students. Kindergarten-2 teachers felt that self-contained classrooms were in the best interest of the child. However, in grades 3-5, teachers felt that because of the high demand on content knowledge, students would be better served, if classes were departmentalized.

Many elementary teachers who are advocates of self-contained classes argue that the bond with the students suffers as a result of not having the same students all day. The downside to self-containment, according to Ackerlund (1959), is that although the teacher is more likely to form strong bonds with her students, she is less likely to be as prepared to teach content areas, because she is spread too thin. He further concluded that when teachers are more prepared in content knowledge, they are more likely to focus on the delivery model, thus increasing their overall effectiveness. The teacher will more likely be able to focus on monitoring how well the students are learning and be able to adapt the classroom instruction accordingly.

When teachers are confident in their abilities, it will directly translate to the students they teach. A study conducted by Muijs and Reynolds (2002) supported the belief that teachers who had high efficacy, had students who were able to produce better scores on achievement tests, as opposed to students taught by teachers with low efficacy.

Likewise, Muijs and Reynolds (2002) found that low teacher efficacy has been linked to low expectations of student achievement.

A teacher, therefore, is able to become an expert in her area of comfort, thus becoming more effective. She will be able to better prepare for the subject matter that is taught. It allows the teacher to use her time more wisely and become a master in one area instead of being spread too thin in her content knowledge (Flick & Lederman, 2003). Chan and Jarman (2004) understand the pressure that elementary teachers face, as they are to be a jack-of-all-trades. This spreads them thin so that they are not able to master one content area.

Michael Schiro (2008) had strong opinions about teachers' beliefs and philosophy and the effect on their teaching performance. Throughout his studies, Schiro found that the best learning takes place when teachers can clearly communicate content knowledge to their students. This requires that teachers know their content well to do this. This would support the notion that departmentalization is in the best interest of the students, since teaching one subject would allow time and energy spent in mastering the one content area. They would become specialists of sorts. Schiro (2008) also maintained that teachers should earn specialist degrees in the subject that they teach.

The traditional role of elementary teachers has been to teach all subjects. They are expected to know all the standards for each of the various subjects and are expected to teach them all well. With the state pressure for students to perform, teachers have immense pressure and often are at their wits end to try everything that they know to do in order to teach students the required material.

Reys and Fennell (2003) suggested it is unrealistic to have teachers teach these

various subjects with excellence. They would do better to focus on one area and become a master at it. Ma (1999) agreed with the unrealistic expectations that are placed on teachers for them to be able to teach all that is needed and have students perform to their full potential. The limited time makes it impossible to meet such demands.

According to Hill, Rowan, and Ball (2005), in a study conducted on teacher content knowledge theory, determined from their data that there was a strong link between teachers' content knowledge and student scores on achievement tests. Teachers who developed their own content knowledge with enriching experiences were able to teach more effectively, thus effecting students scores.

Based on research findings by Kemp and Hall (1992), they stated "the major research finding is that student achievement is related to teacher competence in teaching" (p. 4). As teachers are able to devote more time to prepare for fewer subjects, the better prepared they were in the delivery of their content thus improving their instruction. McPartland (1987) agreed that teachers would be able to provide a higher quality of instruction and develop positive teacher/ student relations, as teachers become experts in a certain area. School structure allows them to devote quality time to this preparation (McPartland, 1990).

Providing a broader knowledge-base using the expertise of various teachers is also a benefit. Teachers who are knowledgeable and well-trained in a content area are more competent and are able to prepare students to do well academically on rigorous state-mandated tests. Providing opportunities to expose students to several knowledgeable and well-prepared teachers can strengthen students' understanding of subjects matter in all content areas.

Lastly, changing classes is beneficial as it provides needed breaks in instruction and a change in environment. Dwyer, Sallis, Blizzard, Lza and Dean (2011) suggest that moving around is beneficial for students and promotes success in academic performance.

A study conducted by Reed (2002) involved gathering opinions about departmentalization in the fourth grade. He interviewed teachers and students, as well as parents. His findings suggested that teachers, students, and parents were supportive of the class structure. The students enjoyed transitioning, as it made them feel more like they were already in middle school.

Success with Departmentalization

In an article written by Lucy Hood (n.d), she recounted an interview with Irving Hamer, Deputy Superintendent of Academic Operations, Technology and Innovation for the Memphis City Schools. He talked about the pressure on the district to perform on the Tennessee Comprehensive Assessment Program (TCAP) Mathematics test that had been recently updated to become more rigorous. He expressed his concerns about the fact that out of the 351 fifth grade Mathematics teachers in the district, not one of them specialized in math. This was a tremendous concern to him, as he noted that the students were essentially being taught by teachers who did not have extensive Mathematics preparation. He further maintained that it does not mean that teachers are not able to teach the necessary standards. However, he was interested in whether or not students would be able to make greater gains if teachers taught them with a specialization in Mathematics.

Many are supporting the idea of departmentalization. Chief Academic Officer in Palm Beach County, Florida, Jeffrey Hernandez, has platooned, or departmentalized,

instruction in elementary schools in his district. He has been known to help improve failing schools. He believes departmentalizing has played a part a significant role in this documented improvements. At one of the schools in his district, Lakeview Elementary School in Miami, the school's grade on the state school rating system was raised from a D to an A. Hood (n.d.) stated that "We had a lot of brand-new teachers, and we needed to develop their content expertise" (p. 3).

He later became a regional administrator in Dade County, where he ended up departmentalizing instruction in 40 of the elementary schools. In these schools, state standardized test scores improved immensely. He now plans to departmentalize third through fifth grades classrooms in most of the district's 107 elementary schools (Hood, n.d.).

Hernandez did not believe any of the excuses people use as reasons not to departmentalize. He believed that students are resilient and flexible; capable of learning in different environments. He had a proven track record that validated the effectiveness of departmentalized elementary schools and the notion that students are capable of learning in less than traditional environments. He does admit that he has seen a trend in that the first two months of initiating departmentalization; there is usually resistance from some teachers. However, once the adjustment phase is over, teachers are generally pleased with their assignments and the results that they are experiencing in their students (Hood, n.d.).

Raychellet Williamson is a principal of Georgia Avenue Elementary School in Memphis. She has also had a great experience with departmentalization in her school. Her school had not been making adequate gains, until she implemented

departmentalization in the fifth grade. Williamson noted that test scores increased as a result and is now ready to have the same classroom structure for her third and fourth grades. Hood (n.d) stated that:

For our school and our intense needs and our need to make significant growth spurts with our students. I knew that my teachers had to be able to focus. They have significant strides they must make...and I think they can do a better job by focusing on one or two subjects, as opposed to five. (p. 3)

A district in Denver, Colorado implemented departmentalization throughout many of its school over the past nine years. Schools that have opted for this class structure feel confident that it has led them to greater collaboration among teachers and stronger test scores. At Denver's Slavens Elementary school it is common for each grade level to have two teachers that share the content load. One teacher is assigned to teach Language Arts and Reading and another teacher focuses on teaching Mathematics, Science, and Social Studies. The downside to this arrangement that has been recognized is the increased student load; each teacher is responsible for teaching more students. On average, instead of teaching 25 students, they each have 50 students to teach. Still, this is a small price to pay for the benefits that come along with this arrangement (Hood, n.d).

A first grade Mathematics, Science, and Social Studies teacher at Slavens Elementary School spoke about her support for implementing departmentalization in her school. She greatly enjoys having a room totally devoted to Mathematics, Science, and Social Studies. "I know them as mathematicians and scientists- all 50 of them" states Michelle DuMoulin (Hood, n.d., p. 2). She continues:

It is almost like they are more excited and rejuvenated. The entire room exudes

what subject your teaching, and I think that really cool for kids. I feel the theme that ties us together is the thinking and metacognitive strategies we are using to teach kids to be thinkers and to delve deep into units. (Hood, n.d., p.2)

When students come to her room, they see themselves as entering the world of Mathematics and the Sciences. It provides for an exciting atmosphere where her students can take risks and learn (Hood, n.d).

Disadvantages of Departmentalization

There is a need for caution when it comes to departmentalization, as students may not form the tight of bonds with various teachers that they would experience by having the traditional one-teacher arrangement. The school climate must remain healthy in order for relationships for productive performance. Cohan (2001) stressed the importance of creating a nurturing environment for elementary students. He stressed that mutual respect and solid relationships are necessary for students to succeed. If schools are to departmentalize then they must consider that they will need to be intentional in establishing strong relationships with their students. In turn, students will want to please and perform for their teachers.

Katherine Boles, senior lecturer at the Harvard Graduate School of Education. Noted that there are additional concerns for caution. She maintained that the danger with departmentalization is that it creates silos. She continued by saying that, “We have to teach (students) to be critical thinkers across subject areas and (to think) deeper about American history and the connection to literacy and science instead of isolating it and platooning” (Hood, n.d., p 4). Platooning refers to departmentalizing, as it is generally

referred to in school districts (Hood, n.d).

A disadvantage to departmentalization is that when students are not in the same classroom all day, it is difficult for the teacher to bond in the same way possible with a traditional self-contained arrangement where she had the students in her room the entire day. When students are able to bond with the teacher, they are more willing to perform for them in an effort to please them. Some believe that curricular integration is compromised with this kind of arrangement (Bryk, Lee, & Smith, 1990; Legters, McDill, & McPartland, 1993).

Molly McCloskey, managing director of the Whole Child Programs at the Association for Supervision and Development was a strong proponent of the self-contained classroom structure. She believed that at the elementary level it is critical for students to remain under the guidance and instruction of one teacher. This provides stability and structure that is important at that developmental stage of their social, emotional, and intellectual development. McCloskey stated that:

In the hierarchy of proprieties, keeping the kids together with one teacher is way up there. Focusing on the relationships is way up there. The more we focus on that as a critical variable in every decision we make, the more we are thinking through the eyes of the children. (Hood, n.d., p. 2)

Canaday and Rettig (1995), had strong opinions when it comes to departmentalization. They strongly believed that departmentalization makes teaching like an assembly line that depersonalizes the relationship between teacher and student. Irmsher (1996), along with McGrath and Rust (2002) believed that self-contained classrooms, where one teacher teaches all subjects to the same students all day, provides

the teacher with an opportunity to develop quality relationship with students. They believed that this in turn will help teachers maximize their instructional time with their students.

Canady & Rettig (1995) mentioned several studies that strongly suggested the belief that departmentalized classrooms reflected lower levels of student achievement than in self-contained classrooms. However, Burts, Charlesworth, and Hart (1997), maintained that teachers who departmentalize effectively will work to integrate all subjects. In this way, students will make sense of what they are learning and make connections that will deepen their understanding.

All subjects should be connected as much as possible in order for departmentalization to be most effective. If a teacher is to be teaching one subject, then they need to have a solid foundation in that subject in order to be effective. At the same time, another research study conducted suggested that knowing about a subject does not necessarily make that person a good teacher in that particular area. As teachers departmentalize, it is essential that they meet on a regular basis to ensure that everyone is able to integrate as effectively as possibly (Merenbloom, 1997).

Harris (1996) argued that when teachers departmentalize, instruction time is lost due to the time it takes for the students to transition. He noted that it would be a better use of instructional time if students were to remain in one classroom with one teacher, thus cutting down on a loss of essential time. His study even supported the idea that student achievement was, in fact, higher in self-contained classrooms than those that were departmentalized.

In middle school, Rueman (1984) found that there was a loss in student achievement during the transition year when students first moved to a departmentalized setting, as opposed to a self-contained setting. Alspaugh & Harting (1995) actually informed schools to expect the decline in student scores, when students were going to be facing the transition upon entering middle school. Some might argue that this is a case against departmentalization in the upper elementary grades. However, some saw this as the exact reason why students should transition in the fourth and fifth grades. In starting at this age, students would be able to make an easier transition into the middle school years. Despite this concern, some still believe the benefits of transitioning earlier to departmentalization outweigh the negatives.

Inlay (2005) believed that ultimately, the socialization of the child is directly connected to how well he or she will perform on an achievement test. For example, students will be more engaged in meaningful experiences at school, when they feel safe in their school environment. When students are able to think critically and receive support from teachers, they will be able to explore and have the confidence to take risks. Ultimately, this will result in a more positive learning experience, which will have implications for performing well on student achievement tests.

Deborah Ball, Dean of the School of Education at the University of Michigan and a member of the National Mathematics Advisory Panel stated that, “In no area do we have solid research that would tell us that the use of something called a ‘specialist’ improves kids; learning at least in part because the notion of what a specialist is can vary so much” (Hood, p 2). She does agree, however, that the idea of departmentalization is “promising”, since it is a “cost-neutral way of upgrading instruction because no

additional teachers need to be hired and professional development can instead be focused on a few teachers” (Hood, n.d., p. 2). In 2008, the National Mathematics Advisory Panel recommended that researchers look into departmentalization and its effectiveness on math instruction (Hood, n.d., p. 2).

Conclusion

There is still adequate research needed to convince school districts that departmentalization is the answer to helping raise test scores. While most have found success with its implementation, there are others who are not convinced that it is the best way to organizationally structure grade level classrooms. Some schools will continue to adhere to the self-contained model as they see it as more beneficial for students. Research will continue to be conducted in order to find hard evidence that this is the best way for teachers to teach and students to learn (Hood, n.d., p.2).

Chan, Terry & Bessette (2009) provided some helpful suggestions to aid in a successful transition from self-contained classrooms to a departmentalized class structure. One suggestion was that educators work with parents. Including parents had a positive impact in their support of teachers. This will translate to higher achievement and satisfaction on the part of their children. When children know that their parents are in agreement of teachers and the school’s efforts at improving academic achievement, they will be more likely to cooperate and participate in the classroom setting.

Another suggestion is to solicit support from the district Central Office. Principals need to maintain clear lines of communication with Central Office personnel, as they are the individuals who will ultimately approve the decision to departmentalize in

their particular school. The Central Office may be able to provide the necessary support as elementary schools transition to the new organizational structure in their upper elementary grades. Special training or professional development should be made available to school sand teacher and any additional resources in order to help teachers be successful in departmentalizing (Chan, Terry & Bessette, 2009).

Collaborating with middle schools is also important. Connecting with feeder schools can be helpful as they can offer advice and recommendations. This is especially true in the initial implementation of departmentalization. Teachers who have experience with departmentalization can offer advice from their experience in order to help ease teacher concerns (Chan, Terry & Bessette, 2009).

Staying current with the research regarding trends in education will help inform teachers. Decisions should be data-driven. Therefore, current literature regarding topics related to self-containment and departmentalization should be made available to teachers who are implementing it so that they can remain aware of current trends, thus positively impacting their instruction (Chan, Terry & Bessette, 2009).

It is also important to look at successful departmentalization programs that are currently being used and apply what they have found to be successful in their implementation. Visiting schools who have successfully implemented departmentalization will help teachers new to the particular class structure, determine how departmentalization worked and become aware of the intricacies of the organizational structure and the conceptual aspects of the grade-level class arrangement. This will help them as they prepare for the new classroom organization model classroom format (Chan, Terry & Bessette, 2009). Teachers are instructed to model what we expect

to see from students. Therefore, it only makes sense, for teachers to see proper implementation modeled for them before they begin to implement it in their own schools.

It is clear that there are advantages and disadvantages to departmentalizing.

Ultimately it is the administrator's call as to whether or not departmentalization will be implemented in the building or district. As previously mentioned, if a new organizational structure is to be used, it is essential and would be in the best interest of the school to conduct research to determine whether or not test scores are being positively affected by the particular class organizational structure. As data drives decisions, teachers can maximize their efforts and know that they are doing right by their students.

CHAPTER III

METHODOLOGY

Overview

The purpose of this study was to determine if departmentalization had a positive effect on the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading and Mathematics among third grade males and females, as well as third grade Minority and Caucasian students comparing two Title I elementary schools in a Middle Tennessee Metropolitan School District with similar demographics. Data were analyzed in order to be analyzed to determine whether or not there were significant Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in a Title I elementary school that implemented departmentalization and a Title I elementary school that did not implement departmentalization. Data were provided by the Tennessee State Department's annual reports from the 2013-2014 school year.

Research Design

The research was a non-experimental, descriptive research design that was used to analyze and compare Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading and Mathematics between a Title I elementary school that implemented departmentalization in third grade and a Title I elementary school that did not implement departmentalization in the third grade. Both sets of scores were compared to determine whether or not departmentalization proved to be more effective in raising Reading and Mathematics Tennessee Comprehensive Assessment

Program percentile scores. Scores were taken from two Title I elementary schools in Middle Tennessee Metropolitan School District. Through the use of the data provided by the Tennessee State Department of Education, the research was used to explore the possible impact of departmentalization on Tennessee Comprehensive Assessment Program scores to determine if the departmentalized class structure had a more significant impact on student achievement than the same data set for a self-contained model.

The preparation of the study included third grade students in a departmentalized elementary school and third graders in a non-departmentalized elementary school in a Middle Tennessee Metropolitan District. Both grades were divided into sub-groups to determine whether or not a specific sub-group scored better in a departmentalized school or a non-departmentalized school. The student data were coded by the school system Central Office data administrator and only codified data were provided to the researcher. This was to maintain complete anonymity and to safe guard the identity of all participants. Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores, from the 2013-2014 school year, were compared.

Instrument

The Tennessee Comprehensive Assessment Program (TCAP) Archival data for third grade students from two Title I elementary schools in Clarksville-Montgomery School District was used in this study. The Tennessee Comprehensive Assessment Program (TCAP) tests were designed to assess student mastery of the Tennessee State Standards. All students in the school were required to take the test, which assessed

standards across all academic areas. However, only Tennessee Comprehensive Assessment Program percentile scores in Reading and Mathematics scores were analyzed. A Microsoft Excel Spreadsheet was used to organize the data into categories in order to sort and analyze the data appropriately. Two-Tailed t -Tests were used for each corresponding comparison.

Procedures

Permission for completion of the proposed study were obtained from the Institutional Review Board at Austin Peay State University and the Director of Curriculum and Instruction for the Clarksville-Montgomery School District. Authorized district personnel provided the codified archival data for all participants involved. All information obtained was kept confidential and participant anonymity was strictly enforced. While collecting data, a master list was generated and coded for confidentiality and anonymity of participation. The data was stored on a personal laptop computer that was password protected and kept in a secure storage unit with restrictions. Only the researcher had access to the data coded Master list format.

Data Analysis Plan

This field study examined eight questions and the corresponding null hypotheses were analyzed using t -Tests. The district's Archival data were submitted to the researcher and used to determine if there was a statistically significant difference for Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics students achievement percentile scores for females and males as well as Minority

students and Caucasian students in the third grade compared to a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize. The information gathered for the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores were compiled, analyzed, and evaluated using Archival data from the 2013-2014 school year.

The Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading for third grade females from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading for third grade females from a Title I elementary school that did not departmentalize. Additionally, Tennessee Comprehensive Assessment Program (TCAP) Reading student achievement scores for third grade males from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive Assessment Program (TCAP) Reading student achievement percentile scores for third grade males from a Title I elementary school that did not departmentalize.

The researcher also used the Tennessee Comprehensive Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade females from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade females from a Title I elementary school that did not departmentalize. Additionally, Tennessee Comprehensive Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade males from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive

Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade males from a Title I elementary school that did not departmentalize.

Tennessee Comprehensive Assessment Program (TCAP) Reading student achievement percentile scores for third grade Minority students from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive Assessment Program (TCAP) Reading student achievement percentile scores for third grade Minority students from a Title I elementary school that did not departmentalize. Likewise, Tennessee Comprehensive Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade Minority students from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade Minority students from a Title I elementary school that did not departmentalize.

Similarly, Tennessee Comprehensive Assessment Program (TCAP) Reading student achievement percentile scores for third grade Caucasian students from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive Assessment Program (TCAP) Reading student achievement percentile scores for third grade Caucasian students from a Title I elementary school that did not departmentalize. Lastly, Tennessee Comprehensive Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade Caucasian students from a Title I elementary school that departmentalized were compared to Tennessee Comprehensive Assessment Program (TCAP) Mathematics student achievement percentile scores for third grade Caucasian students from a Title I elementary school that did not departmentalize.

Each hypothesis was tested using a two-tailed *t*-Test to determine if the scores were above the alpha level ($p < .05$), which indicated whether students performed better when classes were departmentalized. The analysis compared all the Means for all third grade students to determine if there was a statistically significant difference in Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics student achievement percentile scores for each of the subgroups in the population between the Title I elementary school that departmentalized compared to the Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics achievement percentile scores of each of the corresponding sub-groups in the Title I elementary school that did not departmentalize.

Research Questions

The following research questions were generated at the outset of this study and were used to formulate the null hypotheses:

1. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
2. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
3. Is there a statistically significant difference in the Tennessee Comprehensive

- Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
4. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
 5. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did departmentalize?
 6. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
 7. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize?
 8. Is there a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Caucasian students between a Title I elementary

school that departmentalized and a Title I elementary school that did not departmentalize?

Null Hypotheses

The following null hypotheses were formulated based on the research questions and the need to determine the impact departmentalization in one elementary school had on Tennessee Comprehensive Assessment Program percentile scores when compared to the scores from a non-departmentalized elementary school:

1. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
2. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
3. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade females between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
4. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile

- scores Mathematics among third grade males between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
5. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores Reading among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
 6. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Minority students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
 7. There will be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.
 8. There will be no statistically significant difference in Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Caucasian students between a Title I elementary school that departmentalized and a Title I elementary school that did not departmentalize.

CHAPTER IV

DATA AND RESULTS

Demographics

The population for this field study was third grade students in two Clarksville-Montgomery County Title I elementary schools. The study compared third grade student Tennessee Comprehensive Assessment Program (TCAP) Reading and Mathematics student achievement percentile scores from a Title I elementary school that departmentalized and another Title I elementary school that did not departmentalize. The study included Reading and Mathematics Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores among females and males as well as Minority students and Caucasian students. Special Education students along with gifted students and English Language Learners were mixed throughout the aforementioned subgroups.

Testing of the Null Hypotheses

The Two-Tailed t -Test was used in the testing of the hypotheses. Three requirements were needed when using the t -test: normalcy (normality of the dependent variable), homogeneity of variance, and random independent samples. In order for an accurate testing of hypotheses, all three assumptions needed to have been met. The data were platykurtic, which meant they were not representative of a normal curve. Therefore, because the data proved to be platykurtic, the Levene test was used in order to ensure that assumption of variance of homogeneity was met.

All comparisons were gathered for homoscedasticity (equal variances) using the Levene equality of variance *t*-Test. All but one test met the requirement. In that instance, the Welch test was then used in the analysis of the homogeneity of variance to confirm that the assumption was met.

Null Hypothesis One

The first null hypothesis stated that there would be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade females between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the alpha level of significance which was set at $p < .05$ for this study.

According to Table 1, 62 female participants in the Title I elementary school that departmentalized were compared to 39 female participants in the Title I elementary school that was not departmentalized. The achievement percentile scores for the departmentalized elementary school for female students in Reading on the Tennessee Comprehensive Assessment (TCAP) test yielded a 52.0968 Mean score with a Standard Deviation of 28.0782 while the achievement percentile scores for female students in the non-departmentalized elementary school yielded a 65.1538 Mean score with a 22.4810 Standard Deviation

There was a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade females between a Title I elementary school that did departmentalize and a

Title I elementary school that did not departmentalize. The p -value was less than .05, therefore the null hypothesis was rejected. Third grade females in the school that did not departmentalize actually scored higher than third grade females in the school that did departmentalize.

TABLE 1

Two-Tailed t-Test Results Comparing Female Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p -Value
Departmentalized School	62	52.0968	28.0782	0.0115*
Non-Departmentalized School	39	65.1538	22.4810	

*Significance at $p < .05$

When using the t -Test for comparing whether or not there would be a statistically significant difference Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade females in a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize, there was a discrepancy in the homogeneity of variance. The other two assumptions, however, normality and random independent samples, were met. Because only two of the assumptions were met, another test to verify accurate comparison was made. The Welch Test was used in order to see if the homogeneity of variance assumption was maintained. After administering the Welch Test, the resulting outcome

verified that the homogeneity of variance assumption was met. There was a statistically significant difference because the probability of F was 0.0115. The results indicated that females in the non-departmentalized Title I elementary school actually scored higher than the females in the Title I elementary school that did not departmentalize. (See TABLE 1)

Null Hypothesis Two

The second null hypothesis stated that there would be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade males between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the alpha level of significance, $p < .05$.

According to Table 2, 42 male participants in the Title I elementary school that departmentalized were compared to 54 male participants in the Title I elementary school that was not departmentalized. The achievement percentile scores for the departmentalized elementary school for male students in Reading on the Tennessee Comprehensive Assessment (TCAP) test yielded a 46.9388 Mean score with a Standard Deviation of 29.4770 while the achievement percentile scores for male students in the non-departmentalized elementary school yielded a 43.8519 Mean score with a 28.6484 Standard Deviation.

There was no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade males between a Title I elementary school that did departmentalize and a Title

I elementary school that did not departmentalize. Therefore, the null hypothesis was retained. (See TABLE 2)

TABLE 2

Two-Tailed t-Test Results Comparing Male Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	49	46.9388	29.4770	0.5918
Non-Departmentalized School	54	43.8519	28.6484	

Significance at $p < .05$

Null Hypothesis Three

The third null hypothesis stated that there would be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade females between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the alpha level of significance, $p < .05$.

According to Table 3, 61 female participants in the Title I elementary school that departmentalized were compared to 38 female participants in the Title I elementary school that was not departmentalized. The achievement percentile scores for the

departmentalized elementary school for female students in Mathematics on the Tennessee Comprehensive Assessment (TCAP) test yielded a 51.5082 Mean score with a Standard Deviation of 27.3378 while the achievement percentile scores for female students in the non-departmentalized elementary school yielded a 47.3077 Mean score with a 27.9531 Standard Deviation. The p -value was determined to be 0.4619. It was determined that there was no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade females between a Title I elementary school that did departmentalize and another Title I elementary school that did not departmentalize. Therefore, the null hypothesis was retained. (See TABLE 3)

TABLE 3

Two-Tailed t-Test Results Comparing Female Mathematics Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p -Value
Departmentalized School	61	51.5082	27.3378	0.4619
Non-Departmentalized School	39	47.3077	27.9531	

Significance at $p < .05$

Null Hypothesis Four

The fourth null hypothesis stated that there would be no statistically significant

difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade males between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the alpha level of significance, $p < .05$.

TABLE 4

Two-Tailed t-Test Results Comparing Male Mathematics Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	49	51.3469	27.6251	0.2389
Non-Departmentalized School	54	44.6852	29.4393	

Significance at $p < .05$

According to TABLE 4, 49 female participants in the Title I elementary school that departmentalized were compared to 38 male participants in the Title I elementary school that was not departmentalized. The achievement percentile scores for the departmentalized elementary school for female students in Mathematics on the Tennessee Comprehensive Assessment (TCAP) test yielded a 51.3469 Mean score with a Standard Deviation of 27.6251 while the achievement percentile scores for male students in the non-departmentalized elementary school yielded a 44.6852 Mean score with a 29.4393

Standard Deviation. The p -value was determined to be 0.2389. It was determined that there was no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade males between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. Therefore, the null hypothesis was retained. (See TABLE 4)

Null Hypothesis Five

The fifth null hypothesis stated that there would be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Minority students between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the alpha

According to TABLE 5, 48 Minority participants in the Title I elementary school that departmentalized were compared to 61 Minority participants in the Title I elementary school that was not departmentalized. The achievement percentile scores for the departmentalized elementary school for Minority students in Reading on the Tennessee Comprehensive Assessment (TCAP) test yielded a 46.3966 Mean score with a Standard Deviation of 29.6517 while the achievement percentile scores for Minority students in the non-departmentalized elementary school yielded a 48.8525 Mean score with a 26.7406 Standard Deviation. The p -value was determined to be 0.6366. It was determined that there was no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among

third grade Minority students between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. Therefore, the null hypothesis was retained. (See TABLE 5)

TABLE 5

Two-Tailed t-Test Results Comparing Minority Student Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	58	46.3966	29.6517	0.6366
Non-Departmentalized School	61	48.8525	26.7406	

Significance at $p < .05$

Null Hypothesis Six

The sixth null hypothesis stated that there would be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Minority students between a Title I elementary school that did departmentalize and another Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the alpha level of significance, $p < .05$.

According to Table 6, 58 Minority participants in the Title I elementary school that departmentalized were compared to 61 Minority participants in the Title I elementary

school that was not departmentalized. The achievement percentile scores for the departmentalized elementary school for Minority students in Mathematics on the Tennessee Comprehensive Assessment (TCAP) test yielded a 52.2759 Mean score with a Standard Deviation of 27.3834 while the achievement percentile scores for Minority students in the non-departmentalized elementary school yielded a 39.3443 Mean score with a 25.4505 Standard Deviation. The p -value was determined to be 0.0088. It was determined that there was a statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Minority students between a Title I elementary school that did departmentalize and another Title I elementary school that did not departmentalize. Third grade Minority students in the school that departmentalized had higher Tennessee Comprehensive Assessment Program Mathematics percentile scores than third grade Minority students in the school that did not departmentalize. Therefore, the null hypothesis was rejected. (See TABLE 6)

TABLE 6

Two-Tailed t-Test Results Comparing Minority Student Mathematics Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p -Value
Departmentalized School	58	52.2759	27.3834	0.0088*
Non-Departmentalized School	61	39.3443	25.4505	

***Significance at $p < .05$**

TABLE 7

Two-Tailed t-Test Results Comparing Caucasian Student Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	53	53.5660	27.3816	0.3025
Non-Departmentalized School	32	60.2813	29.6944	

***Significance at $p < .05$**

Null Hypothesis Seven

The seventh null hypothesis stated that there would be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Caucasian students between a Title I elementary school that did departmentalize and another Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the Alpha level of significance, $p < .05$.

According to Table 7, 53 Caucasian participants in the Title I elementary school that departmentalized were compared to 32 Caucasian participants in the Title I elementary school that was not departmentalized. The achievement percentile scores for the departmentalized elementary school for Caucasian students in Reading on the Tennessee Comprehensive Assessment (TCAP) test yielded a 53.5660 Mean score with a Standard Deviation of 27.3816 while the achievement percentile scores for Caucasian

students in the non-departmentalized elementary school yielded a 60.2813 Mean score with a 29.6944 Standard Deviation. The p -value was determined to be 0.3025.

It was determined that there was no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Reading among third grade Caucasian students between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. Therefore, the null hypothesis was retained. (See TABLE 7)

Null Hypothesis Eight

The eighth null hypothesis stated that there would be no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Caucasian students between a Title I elementary school that did departmentalize and another Title I elementary school that did not departmentalize. The null hypothesis was tested and analyzed at the alpha level of significance, $p < .05$.

According to Table 8, 52 Caucasian participants in the Title I elementary school that departmentalized were compared to 31 Caucasian participants in the Title I elementary school that was not departmentalized. The achievement percentile scores for the departmentalized elementary school for Caucasian students in Mathematics on the Tennessee Comprehensive Assessment (TCAP) test yielded a 50.5000 Mean score with a Standard Deviation of 27.5272 while the achievement percentile scores for Caucasian students in the non-departmentalized elementary school yielded a 59.2903 Mean score with a 30.5878 Standard Deviation. The p -value was determined to be 0.1940. It was

determined that there was no statistically significant difference in the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics among third grade Caucasian students between a Title I elementary school that did departmentalize and a Title I elementary school that did not departmentalize. Therefore, the null hypothesis was retained. (See TABLE 8)

TABLE 8

<i>Two-Tailed t-Test Results Comparing Caucasian Student Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School</i>				
	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	52	50.5000	27.5272	0.1940
Non-Departmentalized School	31	59.2903	30.5878	

Significance at $p < .05$

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study evaluated and analyzed third grade Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores to determine whether or not there was statistically significant difference in the scores between a Title I school that departmentalized and a Title I School that did not. This chapter is a discussion of the field study and the research findings. The chapter also includes conclusions and recommendations for further consideration.

The participants in this study were from two Title I elementary schools located in a Middle Tennessee Metropolitan School District. The participants attended the schools during the 2013-2014 academic year.

Two-Tailed *t*-Tests were used to analyze the data to determine if statistically significant differences between group means existed. Analyses were conducted to test the null hypotheses at the .05 level of confidence.

The results of this study were that there was no statistically significant difference in Reading among males and females in either school. There was, however, a statistically significant difference among Minority students. Minority students had higher percentile Mean scores in the Title I school that departmentalized. There was also a statistically significant difference among Female participants on the Tennessee Comprehensive Assessment Program (TCAP) Reading test between the two Title I schools. The Females

in the non-departmentalized school had higher Mean scores, which yielded a statistically significant p -value.

Conclusions

The purpose of this study was to determine whether or not departmentalization was more effective and beneficial to third grade students by using their Tennessee Comprehensive Assessment Program (TCAP) student achievement percentiles to determine statistical significance.

Based on the results of the study, third grade Minority students in the Title I elementary school that departmentalization yielded higher Mathematics Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores than third grade Minority students in the Title I elementary school that did not departmentalize. Ironically, the third grade females in the Title I elementary school that did not departmentalize had higher Tennessee Comprehensive Assessment Program (TCAP) student achievement percentiles scores in Reading than third grade females in the Title I elementary school that did departmentalize. There was no statistically significant difference among the other groups for the Tennessee Comprehensive Assessment Program (TCAP) in Reading and Mathematics student achievement percentile scores.

It is easy to speculate that females function best in a consistent, structured environment, thus resulting in the statistically significant results. While there was a statistically significant difference among Minorities on the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentile scores in Mathematics, it

would be interesting to determine if there were additional programs implemented in the departmentalized school versus the non-departmentalized school. It would also be advantageous to analyze which of the Minority students scored higher; males or females.

Unfortunately, due to the inconsistency of the results, concrete findings remain inconclusive. Research indicates that if a teacher is a quality teacher, she will teach well and prepare students for state testing regardless of the organizational structure. The structure of the class does not necessarily have direct connections to how well third grade students will score on the Tennessee Comprehensive Assessment Program (TCAP) student achievement percentiles scores in Reading and Mathematics.

Recommendations

The following recommendations are proposed based on the literature review and findings of this field study:

1. In order to get a more thorough picture of the effect of departmentalization, it would be beneficial to include more than two Title I elementary schools in the testing. Various schools that departmentalize should be compared with an equal number of Title I elementary schools that did not departmentalize. This would broaden the random independent sample, allowing the results to be more accurate.
2. It would also be interesting to determine the improvement that individual Title I schools have seen in their scores, based on a longitudinal study. The longer teachers work using the departmentalized model, the greater the possibility that the model might improve instructionally as time elapses. It would be interesting to see how the test scores reflect the extended use of the departmentalization

model as well as how well teachers incorporate the model in either aspects such as cooperative planning.

3. If principals choose to implement the departmentalization model, it is important that they provide research to support this classroom structure. As teachers see the benefits, they will more likely be supportive of it. It is the responsibility of the principal to prepare teachers so that they are equipped to implement departmentalization well.
4. It would be interesting to see how third grade Title I elementary school students performed the years before departmentalization was implemented as compared to after departmentalization was implemented. This way, the researcher could look for trends to see whether or not students performed higher on Reading and Mathematics Tennessee Comprehensive Assessment Program (TCAP) tests. A comprehensive longitudinal study using several schools and data from several years before the implementing of departmentalization and a corresponding number of years using departmentalization could yield more conclusive research data.

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APPENDICES

APPENDIX A

LETTER REQUESTING PERMSSION TO CONDUCT RESEARCH IN THE
CLARKSVILLE-MONTGOMERY COUNTY SCHOOL SYSTEM

February 10, 2014

Dr. Sallie Armstrong
Director of Curriculum
Clarksville-Montgomery County School System
621 Gracey Avenue
Clarksville, TN 37040

Dear Dr. Armstrong:

I am pursuing an Educational Specialist Degree at Austin Peay State University and I am presently enrolled in Education 6050, Seminar on Research. A requirement of the course, as well as the degree, is the development of a proposal for research. This letter is a request for permission to conduct research using archival data Clarksville-Montgomery County School System for the field study.

The research study will be entitled "The Impact of Departmentalization Among Third Grade TCAP Reading and Mathematics Achievement Percentile Scores Between Two Middle Tennessee Metropolitan Title I Elementary Schools". Mrs. Lovelace, the principal of Ringgold Elementary School and I have agreed that this research study will be beneficial to our school.

The research methods that will be analyzed will be the Reading and Math TCAP achievement percentile scores from the 2013-2014 school-year. Ringgold, a school that was not departmentalized in third grade will be compared to Minglewood, a school that did departmentalize in third grade.

The field study will answer the question of whether or not there is a significant difference in Reading and Math TCAP achievement percentile scores among third grade students between a title 1 school that departmentalized and a title I school that did not departmentalize.

- A. The general target population of this study would be....
- B. The purpose of the study would be to identify the difference in academic achievement between 4-5th grade students in Title 1 schools who departmentalize and those that do not.
- C. Individual students will not be identified this study and therefore it may not be necessary to inform parents or obtain parents' written consent.
- D. The results of the research will be displayed in my field study in texts, charts, and graphs.
- E. The results of the research will be provided to the Research Committee in CMCSS and be published in my field study for APSU.

Thank you for consideration of my research proposal.

Respectfully,
Mrs. Erika McCraw
Kindergarten Teacher
Ringgold Elementary School
Erika.mccraw@cmcss.net

APPENDIX B

CLARKSVILLE-MONTGOMERY COUNTY SCHOOL SYSTEM

SCHOOL BOARD APPROVAL

Stewart, Gary

From: Erika McCraw <Erika.McCraw@cmcass.net>
Sent: Monday, March 17, 2014 11:04 AM
To: Stewart, Gary
Subject: FW:

From: Sallie Armstrong
Sent: Thursday, March 06, 2014 11:01 AM
To: Erika McCraw
Cc: Leigh Ann Parr; Kimmie Sucharski
Subject: RE:

The Research Committee approved your request to conduct research in Clarksville Montgomery County Schools.

Sallie Armstrong, Ed.D.
Director of Curriculum and Instruction,
Curriculum and Instruction Department
Clarksville-Montgomery County School System
Office: 931-920-7819
Cell: 931-980-2637
Email: sallie.armstrong@cmcass.net



From: Erika McCraw
Sent: Tuesday, March 04, 2014 8:04 PM
To: Sallie Armstrong
Subject:
Importance: High

Hello! My name is Erika McCraw. I introduced myself to you at Ringgold during our Kindergarten meeting the other day. I am currently working on my field study through APSU for my Ed.S. in Educational Leadership. I have attached my request letter. Thank you for your time!

Respectfully,
Erika McCraw

APPENDIX C

AUSTIN PEAY STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD APPROVAL



AUSTIN PEAY STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Date: 6/2/2014

RE: 14-026 The Impact of Departmentalization on 3-5th Reading and Math Student TCAP achievement scores

Dear Erika McCraw,

We appreciate your cooperation with the human research review process at Austin Peay State University.

This is to confirm that your research proposal has been reviewed and approved for exemption from further review. Exemption is granted under the Common Rule 45 CFR 46.101 (b) (4); the research involves only the study of existing data, the data is recorded in such a manner that the subjects cannot be identified directly or through identifiers.

You may conduct your study as described in your application, effective immediately. Please note that any changes to the study have the potential for changing the exempt status of your study, and must be promptly reported and approved by APIRB before continuing. Some changes may be approved by expedited review; others require full board review. If you have any questions or require further information, you can contact me by phone (931-221-6106) or email (shepherdo@apsu.edu).

Again, thank you for your cooperation with the APSU IRB and the human research review process.

Sincerely,

Omie Shepherd, Chair
Austin Peay Institutional Review Board

Cc: Dr. Gary Stewart

TABLES

TABLE 1

Two-Tailed t-Test Results Comparing Female Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	62	52.0968	28.0782	0.0115*
Non-Departmentalized School	39	65.1538	22.4810	

*Significance at $p < .05$

TABLE 2

Two-Tailed t-Test Results Comparing Male Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	49	46.9388	29.4770	0.5918
Non-Departmentalized School	54	43.8519	28.6484	

Significance at $p < .05$

TABLES CONTINUED

TABLE 3

Two-Tailed t-Test Results Comparing Female Mathematics Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	61	51.5082	27.3378	0.4619
Non-Departmentalized School	39	47.3077	27.9531	

Significance at $p < .05$

TABLE 4

Two-Tailed t-Test Results Comparing Male Mathematics Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
Departmentalized School	49	51.3469	27.6251	0.2389
Non-Departmentalized School	54	44.6852	29.4393	

Significance at $p < .05$

TABLES CONTINUED

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Two-Tailed t-Test Results Comparing Minority Student Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

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	Participants	Mean	Standard Deviation	p-Value
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***Significance at $p < .05$**

TABLES CONTINUED

TABLE 7

Two-Tailed t-Test Results Comparing Caucasian Student Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
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Non-Departmentalized School	32	60.2813	29.6944	

*Significance at $p < .05$

TABLE 8

Two-Tailed t-Test Results Comparing Caucasian Student Reading Tennessee Comprehensive Assessment Program (TCAP) Student Achievement Percentile Scores Between a Departmentalized and a Non-Departmentalized School

	Participants	Mean	Standard Deviation	p-Value
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Significance at $p < .05$