THE IMPACT OF TRADITIONAL AND DEPARTMENTALIZED CLASSROOM INSTRUCTIONAL SETTINGS ON FIFTH GRADE STUDENTS' READING ACHIEVEMENT

by

Shakera Teneshlia Chennis

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The purpose of this quantitative casual-comparative research was to provide educators data pertaining to reading and the influence of classroom instructional setting on reading test scores. This study investigated if learning in a departmentalized instructional setting had a subsequent positive effect on fifth grade students' reading achievement as measured by the 2015 Virginia Standards of Learning Assessment, as opposed to fifth grade students who were exposed to a traditional instructional setting. Data was collected from the accountability office of the selected school district. Fifth grade students in a departmentalized or traditional regular education classroom participated in this study. The convenience sampling of 737 students were from grade K-5, non-Title I elementary schools in the suburban area of the school district. An analysis of covariance (ANCOVA) was conducted to determine if there was a statistically significant difference between mean reading scale scores of fifth grade students who were taught using different instructional settings while controlling for prior achievement. The statistical analysis of this study showed no significant difference in reading achievement scores between students taught in a traditional or departmentalized instructional setting. Therefore, recommendations for further research were provided.

Keywords: instructional setting, departmentalized, traditional instructional setting, reading achievement

Dedication

This work is dedicated to my mom who passed away in April of 2010. She was my motivator and encourager. When I felt like giving up during this journey, I would think of her and how she would tell me "You can do it Kero". I will always remember her love for Christ, her love for her family, and most of all her love and compassion for people. -Rest in Heaven Mom!

This work is also dedicated to my entire family. I would like to begin with my two boys Landon and Braydon. You have watched me work tirelessly to reach my goals. I hope that when you get older you will remember the sacrifice and dedication and apply it to your lives, so that you can be successful and live in prosperity with the help of our Lord Jesus Christ. To my six brothers and sisters, I don't know if I could have finished this journey without your listening ears. Even when you had no clue of what I was talking about you still encouraged me to move forward. Lastly, to my dad. I'm so glad you are still here to see me finish this race. I'm glad I could call you for prayer when I felt like giving up. Most of all, I'm glad you raised me in church and in the Word so that in those tough times I can remember that I can do all things through Christ who gives me strength. Thank you!

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Dr. Nelson, you have been one of the most dedicated professors I have ever had the privilege of working with. You quietly listened to my tantrums and always knew the right thing to say to bring me back to reality. You always boosted my confidence and encouraged me when the road was rough, thank you! Dr. Washington thank you for serving on my committee. I knew you were the right one, when I contacted you. Your enthusiasm about my topic was encouraging in itself. Dr. Edmonds, you have been my greatest motivation. When I found out that you had completed your doctorate, I knew that if I pushed I could be just like you. Thank you so much for your encouragement and cheers throughout this process. I thank you all!

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Adequate Yearly Progress (AYP)

U.S. Department of Education (DOE)

Institutional Review Board (IRB)

National Assessment of Educational Progress (NAEP)

No Child Left Behind (NCLB)

Standards of Learning (SOLs)

Statistical Package for the Social Sciences (SPSS)

Virginia Department of Education (VDOE)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

Departmentalized and traditional instruction in the elementary school is not uncommon. Departmentalized instruction is typically incorporated into upper elementary grades, such as fourth or fifth grade. The departmentalized setting in the elementary school consists of two or more teachers, who teach one or more core subject areas, to at least two groups of students. Background information provided in chapter 1 includes information related to the history of education, educational laws, and instructional settings in the elementary school. Following the background, the problem and purpose statements are defined and provide an explanation of the objective of this study. The significance of this quantitative study, along with the research questions, hypotheses, and definitions of terms, are outlined in this chapter.

Background

Teachers who provide instruction at the elementary level are tasked with the demand of teaching all science, mathematics, social studies, and language arts standards of a state mandated curriculum, while also meeting the behavioral needs of students and fulfilling administrative duties in a non-departmentalized elementary classroom setting (Bouchamma, Poulin, Basquel, & Ruel, 2014). Departmentalized settings are common in middle and high schools where teachers teach at least one core subject, such as reading (Scarpello, 2010). In addition to reading, the traditional elementary school teacher must also be knowledgeable and proficient in all core subjects to meet the expectation of ensuring student success (Bouchamma et al., 2013; Bozack, 2011; Nelson, 2014; Scarpello, 2010).

The history of education sets the premise for the transition from traditional classroom settings to the introduction of departmentalized settings in some elementary schools. The No

Child Left Behind (NCLB) Act of 2001, which was signed by President George W. Bush, sought to close the achievement gap permanently between the economically disadvantaged, minority students, and economically advantaged, nonminority students by the end of the 2013-2014 school year (United States Department of Education [USDOE], 2007). Under this act, closure of the achievement gap was to be attained through steady gains in reading and mathematics as measured by standardized assessments until students met or exceeded grade level proficiency. Because of the implementation of NCLB, states became responsible and accountable for student gains, which were measured by adequate yearly progress (AYP) (Harris, 2012; Lauen & Gaddis, 2012; USDOE, 2003; Yearwood, 2011). NCLB mandated states show growth in student achievement, and required teachers to be highly qualified in the field of education (Johnson & Hanegan, 2006).

In 2011, President Obama's administration created a flexibility package that coincided with the Elementary and Secondary Education Act of 1965 (ESEA). This package allowed states to waive certain provisions of NCLB, which included the requirement that all students were to be proficient in reading and mathematics by 2014. Instead, states could establish achievable goals to support improvement efforts for all students and schools (USDOE, 2011). In addition to the waiver, states were required to implement reform measures, such as adopting college- and career-ready standards in reading and math designed to raise achievement levels for all students over time along with an aligned statewide test (USDOE, 2011).

The flexibility package largely contributed to the educational community in Virginia and for other states that took advantage of the opportunity. In June of 2012, Virginia was granted approval to take advantage of the flexibility package. As part of some of the requirements by the Center for Education Policy, the state moved away from AYP, which described the amount of

improvement Title I schools made each year to close the achievement gap to Annual Measurable Objectives (AMOs), which represent the percentage of all students, not just Title I, who must pass the statewide assessment in reading and mathematics over six years (USDOE, 2009; Virginia Department of Education [VDOE], 2013a). The state agreed to create and establish annual benchmark goals for student learning to reduce the reading and mathematics proficiency gaps between students in the lowest-performing and highest-performing schools (VDOE, 2012b). With this new plan in place, all subgroups, which included gender, ethnicity, limited English proficiency (LEP), students with disabilities, and the economically disadvantaged for all schools, were expected to achieve a pass rate of 78% or higher on the statewide assessments (VDOE, 2013a).

With mandates, such as NCLB, AYP, and AMOs; administrators, teachers, and other stakeholders began to seek ways to close the achievement gap in all content areas of education (Johnson & Hanegan, 2006; Saavedra & Opfer, 2012). Issues with meeting mandates forced changes in education to meet the requirements. One possible strategy for improving student learning was to change the instructional setting. Elementary schools have embraced and adopted a variety of settings such as self-contained, traditional, team-taught, co-taught, inclusive, and departmentalized classrooms. Self-contained, traditional, and inclusive classrooms have been defined as classroom settings with one teacher who teaches all core subject areas to one set of students for most the school day (Chang, Munoz, & Koshewa, 2008; Hood, 2010; Nelson, 2014; Yearwood, 2011). Team teaching, co-teaching, and departmentalization have been defined as a classroom setting in which one or more teachers teach one or two subjects to two or more groups of students throughout the school day (Chang et al., 2008; Nelson, 2014; Yearwood, 2011).

The theoretical contributions of Vygotsky and Piaget set the foundation for the importance of teacher competency on subject matter and student success. Vygotsky's (1935) sociocultural learning theory focuses on the intellectual development of children through their environment and social interactions. Piaget's (1954) constructivist theory posits that children construct their own learning using internal mental processes and schema. The collaborative works of Vygotsky and Piaget devote to the theory of social constructivism, which focuses on the social interaction of children and the ability to construct knowledge using schema and developmental reasoning with their environments (Pritchard & Woollard, 2010; Vygotsky, 1978). In the educational setting, the theory of social constructivism includes interaction and collaboration with teachers and peers and the connection to student success in both the departmentalized and traditional instructional setting.

The traditional setting is the norm in elementary schools and has been thought the best way to address the needs of the *whole child* as well as allow for stronger teacher-student relationships and an all-inclusive support system for learning (Canady & Reting, 2008; Nelson, 2014; Williams, 2009). The social constructivist theory and its relationship to the departmentalized setting may provide a learning environment more beneficial for students. In the departmentalized setting, the teacher facilitates and fosters cooperative learning opportunities, which encourage students to collaborate with one another (Abbatti, 2012; Hood, 2010; Nelson, 2014).

The acquisition of reading aligns with the social constructivist theory that language and reading develop through social interaction with the environment that children encounter (Yearwood, 2011). Given the high demand for progressive student achievement, and the pressures to achieve that goal, research has attempted to determine if departmentalized or

traditional classrooms yield the best results for closing the achievement gap in reading at the intermediate elementary level (Baker, 2011; Cavanagh & Hoff, 2008; Chang et al., 2008; Kent, 2010; Nelson, 2014; Slavin, Lake, Chambers, Cheung, & Davis, 2009; Williams, 2009; Yearwood, 2011).

Problem Statement

Although schools have been known to participate in departmentalized instruction, little recent research investigated this model and the relationship between reading achievement and instructional setting (Markworth, Brobst, Ohana, & Parker, 2016). A considerable amount of research has been conducted regarding departmentalized and traditional classroom settings across subject areas. Research has found that students see growth academically when skills from reading instruction is used cross-curricular (Deemer et al., 2014; Ramsey et al., 2013).

Studies by Mitchell (2013), Skelton (2015), Nelson (2014), and Van Houten (2012) found a direct relationship between achievement and instructional setting in science and mathematics. However, Mitchell (2013) and Skelton (2015) included reading instruction and both studies favored traditional reading instruction. Mitchell's (2013) population consisted of an urban school district in California and Skelton's (2015) consisted of all school districts in Mississippi. Research by Moore (2008) and Yearwood (2011) yielded mixed results regarding departmentalization and student achievement in math and science, but the results for reading favored departmentalized instruction. Moore's (2008) population consisted of all schools in a district in Tennessee with good standing with No Child Left Behind requirements and Yearwood's (2011) population consisted of a rural population in Georgia. A study by Kent (2010) found no difference at all in students' reading achievement for either traditional or

departmentalized classroom settings in an urban area in Kentucky. All afore mentioned research studies take place in Common Core states in non-suburban areas.

Because of the overall inconclusive results among researchers, a gap appears to be in determining the effect of the classroom setting on reading achievement of fifth grade students in suburban areas. There is also a gap in determining if schools that do not use common core standards would see a significant difference in reading achievement. The problem is that relevant research yielded inconsistent results about the effects of departmentalized instructional setting on all students' academic achievement, specifically in reading.

Purpose Statement

The purpose of this quantitative casual-comparative study is to investigate if the type of instructional setting influences reading achievement of fifth grade students. Reading achievement can be defined as the mastery of performance goals mandated, in this case, by the Virginia Department of Education for the purposes of data analysis of student growth and curriculum development in reading (Sideridis, Stamovlasis, & Antoniou, 2015; VDOE, 2012a). This nonexperimental causal-comparative research design was chosen because the researcher sought to determine if there were cause-and-effect relationships between the instructional setting (i.e., the independent variable) of fifth grade students and the 2015-2016 fifth grade Standards of Learning reading achievement scores (i.e., the dependent variable) (Gall, Gall, & Borg, 2007; Warner, 2013). The departmentalized instructional setting consists of one teacher who teaches one or two subject areas throughout the school day as students rotate from one class to another (Canady & Rettig, 2008; Chang et al., 2008; Nelson, 2014; Yearwood, 2011). The traditional instructional setting consists of one teacher teaching all core subjects areas to one group of students throughout the school day (Canady & Rettig, 2008; Chang et al., 2008; Hood, 2010;

Nelson, 2014; Yearwood, 2011). The Standards of Learning reading achievement scores are measured based upon student mastery of word analysis and comprehension of fiction and nonfiction text (VDOE, 2012a). The 2014-2015 fourth grade Standards of Learning reading test scores were used as a covariate to establish baseline equivalence. The fourth grade Standards of Learning achievement scores are also measured based upon student mastery of word analysis and comprehension of fiction and nonfiction text at the fourth-grade level (VDOE, 2012a). The 737 participants in this study were from non-Title I, K-5 elementary schools in a suburban public-school district. The students received reading instruction from identical curriculum guidelines but in two different instructional settings and from different teachers. This analysis will address the gap in the literature regarding the effect of departmentalization on reading achievement of fifth grade students who completed the fourth-grade reading assessment.

Significance of the Study

Strohl, Schmertzing, and Schmertzing (2014) noted that a benefit of departmentalization was the opportunity for teachers to provide effective instruction based on the teachers' specialization. Students are more likely to master objectives and be more successful when they receive effective instruction in the departmentalized classroom (Markworth et al., 2016; Strohl et al., 2014). The current study has the potential to provide beneficial information about organizational arrangement when educators are looking to improve instructional delivery and the design of the instructional setting, as well as add to the scarce body of knowledge concerning this issue.

District administrators have given school administrators and staff authorization to come up with the most effective ways to instruct their students if they meet accountability standards to include steady progress as measured by standardized tests (Mooney, 2013; Wilde, Koot, & van

Lier, 2015). This study could be replicated in other states and school districts to determine if a difference exists in student achievement scores dependent upon the classroom instructional setting. Information and data from this study could impact the decision-making of schools to choose an organizational structure most suitable to teachers and students.

This study is significant because it will contribute to the field of education and help administrators and teachers determine if departmentalization at the upper elementary level is an effective option to consider when researching viable methods to close the achievement gap. Empirical evidence from this study might provide pivotal information about which instructional setting, departmentalized or traditional, may have the greatest impact on student achievement and learning. Teachers of upper elementary students and school specialists could use data from this study to formulate possible solutions to meet the needs of all students.

Research Question

RQ1: Is there a difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores?

Definitions

1. *Achievement Gap*- A consistent difference in student achievement test scores between whole groups and subgroups (Eddy, 2008).
2. *Adequate Yearly Progress (AYP)*- The amount of improvement Title I schools makes each year to close the achievement gap using standardized test scores as an indicator (USDOE, 2009).

3. *Analysis of Covariance (ANCOVA)* - A statistical calculation "used to control for initial differences between groups before a comparison of the within-groups variance and between groups variance is made" (Gall et al., 2007, p. 320).
4. *Annual Measurable Objectives (AMOs)* - The percentage of all students, not just Title I, who must pass the statewide assessment in reading and mathematics over a period of six years (VDOE, 2013a).
5. *Causal-comparative research design*- A nonexperimental investigation used in quantitative research, "in which researchers seek to identify cause-and-effect relationships by forming groups of individuals in whom the independent variable is present or absent—or present at several levels—and then determining whether the groups differ on the dependent variable" (Gall et al., 2007, p. 306).
6. *Departmentalized instructional setting*- A class in which one or more teachers teach one or two subjects to two or more groups of students throughout the school day (Canady & Rettig, 2008; Chang et al., 2008; Nelson, 2014; Yearwood, 2011).
7. *No Child Left Behind (NCLB)*- An act signed by President George W. Bush in 2001, which sought to close the achievement gap permanently between the economically disadvantaged, minority students, and their peers by the end of the 20132014 school year (USDOE, 2007).
8. *Social constructivist theory*- A learning theory based on the work of Vygotsky, Piaget, Bruner, Bandura, and Dewey, which implies that children construct their knowledge through social and collaborative activities in the classroom setting (Nelson, 2014).

9. *Traditional instructional setting*- A class with one teacher who teaches all core subject areas to one set of students for the majority of the school day (Chang et al., 2008; Hood, 2010; Nelson, 2014; Yearwood, 2011).
10. *Virginia Standards of Learning (SOL)*- "The Standards of Learning (SOL) for Virginia Public Schools establish minimum expectations for what students should know and be able to do at the end of each grade or course" (VDOE, 2012a, p. 1). The students are assessed in reading, mathematics, and science in grade 5.

CHAPTER TWO: LITERATURE REVIEW

Overview

Various researchers have written on the topic of classroom instructional settings, but minimal research exists on the effects of classroom instructional setting on the academic achievement of students in reading. Chapter 2 begins with an overview of the theoretical framework, which provides a synopsis of the culture and development of education. The review of literature contains a comprehensive review concerning the impact of the educational system on student achievement, which leads into the expectations for teaching in Virginia and the role of the teacher in Virginia. The review incorporates the implementation of traditional and departmentalized instruction along with its effect on gender and race, as well as the process of reading development on children and reading instruction in Virginia. In the review, the need for further research on the effect of instructional setting on reading achievement in the elementary school is established.

Theoretical Framework

The goal of this causal-comparative research study is to evaluate if the reading achievement of regular education fifth grade elementary students, who receive instruction in a departmentalized classroom setting, exhibit higher levels of reading achievement compared with regular fifth grade elementary students who receive a traditional method of instruction. The departmentalized and traditional classes participated in the Virginia Standards of Learning assessment and followed the curriculum provided by the school district, which is aligned with the Virginia standards.

According to Strohl et al. (2014), schools have incorporated and accepted a variety of classroom settings, such as self-contained, traditional, team-taught, co-taught, inclusive, and

departmentalized classes. This study focused on two of those settings: traditional and departmentalized. Traditional, non-departmentalized classrooms have been defined as a classroom setting with one teacher who teaches all core subject areas to one set of students for most of the school day (Chang et al., 2008; Hood, 2010; Nelson, 2014; Yearwood, 2011). Departmentalized classrooms have been defined as a classroom setting in which one or more teachers teach one or two subjects to two or more groups of students throughout the school day (Chang et al., 2008; Nelson, 2014; Yearwood, 2011).

Teachers in a departmentalized setting tend to be known as content specialists, meaning that educators have become or are becoming an expert in a specific content area or areas such as reading or mathematics (Strohl et al., 2014). Studies by Strohl et al., Brashears (2006), and Schwartz and Gess-Newsome (2008) noted that teachers' self-efficacy, attitude, and quality of instruction improved when the scope of teachers' instruction was narrowed. Operating in a departmentalized setting may impact the preparedness of teachers, thus improving student learning because of repetition throughout the day and the opportunity to adjust lessons and constantly reflecting on those repeated lessons (Eidietis & Jewkes, 2011; Strohl et al., 2014). Repetition and reflection are key benefits, but the opportunity to teach a favorable subject has also been shown to impact instruction and student achievement (Wilkins, 2010).

Although the benefits of departmentalized classrooms have been researched, contradictory results regarding the levels of student achievement exist regarding when students are taught in a specific instructional setting (Nelson, 2014). As a result, further research and evaluation involving the effectiveness of departmentalized instructional settings and their impact on student performance are essential. The gap in the literature pertaining to instructional setting

and the achievement levels of minority and gender subgroups warrant the need for further research (Kent, 2010; Moore, 2008; Nelson, 2014; Williams, 2009; Yearwood, 2011).

The relationship between instructional setting and student achievement has been linked to sociocultural learning theory (Eddy, 2008; Nelson, 2014; Yearwood, 2011). Contributions from theorists, such as Vygotsky and Piaget, enable researchers to use a combination of sociocultural and constructivist learning theories in the field of education. This combination is known as a social constructivist learning theory. Vygotsky (1935) produced the theory of sociocultural learning. In later research, Vygotsky (1978) incorporated the constructivist theory with contributions of Piaget (1952, 1954, 1962). Vygotsky (1978) believed children gained understanding, built conceptual knowledge, and developed individuality through social experiences with adults and peers. Vygotsky suggested that when speech and practical activity converged, practical and abstract intelligence were birthed. This form of intelligence is a significant moment of development.

Vygotsky's (1935, 1978) sociocultural learning theory deems that children gain understanding, build conceptual knowledge, and develop individuality through their social experiences both at their home environment and through peer interaction. This foundational part of development for children is sporadic and spontaneous. Vygotsky (1978) posited that the cultural development of a child appears twice. Cultural development is first seen interpsychologically, socially between people, then intrapsychologically, which is the individual functional level. The levels of cultural development also apply to the formation of concepts. Higher functions of development originate as actual relationships between people.

Vygotsky (1978) discussed three major theoretical positions, which he rejected as a foundation for developing his overall framework. The first position centers around the

assumption that child development processes are not dependent upon learning. Vygotsky wrote, "Learning is considered a purely external process that is not actively involved in development. It merely utilizes the achievements of development rather than providing an impetus for modifying its course" (1978, p. 29). Vygotsky posited that deductive reasoning and understanding about the world and logical thought processes occurred without the influence of teacher-led instruction. Vygotsky's second position deems that learning is progressive. This notion is based on the premise that the process of learning and the process of development are intrinsically inseparable. The third position is simply a combination of child development and progressive learning, which means that maturation depends on the development of the nervous system, and learning itself is a developmental process. To defend his rejection of these theoretical positions, Vygotsky noted that the essential aspect of the three major theoretical positions was the concept that once a child had learned steps to a process, some structural principles were assimilated. Because the foundation of a principle was assimilated, Vygotsky found that when a child made one step in learning, two steps were made in development; therefore, learning and development do not occur simultaneously.

Piaget's research revealed that knowledge was constructed based on social interactions, but personal experience had the greatest impact on how knowledge was created (Powell & Kalina, 2009). Piaget (1951) concluded that children tended to believe that the source of knowledge occurred innately. Children consider everything learned and taught originated in themselves with some influence of memory. Piaget (1952, 1954) believed the foundation for the development of children was achieved when each child constructed his or her own learning and internalized mental and thinking processes using schematic processes. He concluded that the child tried to gain a result that would be desired amid difficulties that had not yet been observed.

At this moment, the child does not merely reproduce what has been seen before, but instead ends up in a new situation.

Powell and Kalina (2009) affirmed that knowledge was constructed based on social interactions, but personal experience had the greatest impact on how knowledge was created. Children use their prior knowledge and personal experiences to learn new things through the process of accommodation and assimilation (Wadsworth, 2004). Piaget (1952) concluded that new learning can only take place if the external experience could not be assimilated from prior knowledge. With Piaget's theory in mind, the traditional classroom setting may be the best structure to align with the constructivist theory because students interact with the same teacher for most of the school day (Chang et al., 2008; Yearwood, 2011).

To infuse the sociocultural and constructivist theory, Vygotsky (1978) explained that social interaction preceded development because the goal of socialization and social behavior were consciousness and cognition. Vygotsky and Piaget shared some assumptions related to how children learn. Vygotsky emphasized that learning was affected by social interactions, specifically, developmental zones. The zone of proximal development (ZPD) represents the premise that knowledge is acquired when the learner is within the developmental zone. Vygotsky (1978) defined ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). For concepts students cannot understand independently, knowledge is constructed in the zone of proximal development (Vygotsky, 1962, 1978). Similar to Piaget, Vygotsky's zone of proximal development was based on the distance between the most difficult

task a child can achieve independently and the most difficult task a child can achieve with assistance.

The promotion of self-regulated learning in students is constructed through high-quality interactions with adults (Brofenbrenner, 1977; Vygotsky, 1978). Mooney (2013) posited that from an instructional standpoint, teachers can observe students by watching and listening to get an understanding of each child's development and then plan the curriculum accordingly. This action can also be used to stretch and challenge a child's developmental skill set. These opportunities to gain and construct knowledge may be provided in a departmentalized instructional setting based on the works and theories of Vygotsky (1935, 1978) and Piaget (1954).

Social Interaction, Learning, and Executive Function

When children enter the world of learning with other children, whether in preschool or the start of kindergarten, "the child's mental work consists principally in establishing relationships between experience and action; his concern is with manipulating the world through action" (Bruner, 1960, p. 34). Bruner (1971) discussed the importance of social interaction and establishing a learning community within the school setting, beyond just the one teacher in the classroom. Bruner (1971) elaborated on cross-age tutoring, which occurs when older students (i.e., high school age) tutor elementary age students. Through this concept, Bruner established that those who do the talking, do the learning. This process also allows students to learn simultaneously through repetition.

Through the type of social interaction described by Bruner, Dewey (1916) further advocated these interactions aid in how students learn and construct meaning. To facilitate learning and to provide educational experiences, Dewey (1916) recommended teachers have a

strong general knowledge base in both subject matter and the child, use their knowledge and experience to help children make sense of the world, and devote time to observing, organizing, documenting, and planning for purposeful curriculum experiences. Scaffolding, by both the teacher and peer teachers with some experience, stimulates the learning process of students through constant interaction. These social/learning interactions also allow for the opportunity to form relationships (Dewey, 1916; van Lier & Deater-Deckard, 2015).

Although establishing relationships as a new student in school is detrimental to success, the classroom also becomes a place of learning experiences along with the practice of social skills to develop friendships and understand the *rules* of working with teachers and other authority figures (van Lier & Deater-Deckard, 2015). Research by Cadima, Verschueren, Leal, and Guedes (2015); Jennings and Greenberg (2009); and van Lier and Deater-Deckard (2015) found that the greater the quality of instruction and closeness between teacher and student, the higher the level of self-regulation for the child, particularly boys. The relationships between child and peers, and child and teacher play a vital role in shaping executive function development, which is in alignment with Vygotsky's zone of proximal development and Dewey's scaffolding. These relationships also affect working memory, which, in turn, affects student academic performance (Cadima et al., 2015; van Lier & Deater-Deckard, 2015; Wilde, Koot, & van Lier, 2015). To activate ZPD and to provide scaffolding continuously, teachers can allow time for play, offer child appropriate props and toys, and observe playtime while making suggestions for thematic ways to enrich and extend the activity (Mooney, 2013).

In a departmentalized setting, opportunities exist to build strong and positive student-teacher relationships and produce positive academic achievement (Hafen et al., 2015; Rudasill, Gallaher, & White, 2010). Crosnoe, Cavanaugh, and Elder (2003) explained that peer

relationships and working together cooperatively were of vital importance to students and needed to be built into classroom interactions meaningfully and productively. The researchers explained that "the linkage between the attitudes and behaviors of friends and adolescent academic functioning within and across settings was an attempt to treat friendship in a multifaceted and context-specific way" (Crosnoe et al., 2003, p. 17).

Along with building relationships, the opportunity for self-regulated learning can be provided in departmentalized settings when students interact with multiple teachers in different content areas (Nelson, 2014; Page, 2009; Yearwood, 2011). Differentiated instruction and diverse, dynamic, and individualized learning opportunities can take place in the departmentalized classroom (Nelson 2014; Van Tassel-Baska et al., 2008). Differentiated instruction "involves finding multiple ways to structure a lesson so that each student is provided with an opportunity to work at a moderately challenging level (Wan, 2017, p. 284).

Cognitive Development and Cooperative Learning

Vygotsky (1978) listed four stages of cognition, which develop from infancy to adulthood. The first stage, from birth to about two years old, is the primitive stage and involves emotional releases of language (e.g., crying or cooing). Words with little meaning emerge to suggest that the child has a desire or would like an object. The second stage, beginning around age two, involves a notable increase in vocabulary. Words now have a symbolic meaning; however, the child may not understand the structure of language. The third stage emerges around the age of four. Egocentric speech is not particularly addressed to anyone, rather children *act out* and monologue, sometimes using different tones of voice. In the final stage, the ingrowth, mental symbols replace the sound of speech. At this point, thinking and language function as an internal form of egocentric speech. The development of the fourth stage

encourages students to explain their thinking to another student, which lends itself to building cognitive development (Bruner, 1971). Researchers, such as Dwyer (2010) and Nelson (2014), examined Vygotsky's theory to explore the correlation between cognition and learning.

Mooney (2013) discussed Piaget's standpoint that physical development played a partial part in children's intellectual growth, which led him to present stages of cognitive development. The first stage, sensorimotor, occurs from birth to age two. In this stage, children learn through their senses and reflexes and learn to manipulate materials. The preoperational stage occurs from age two through seven. At this stage, children use their perception to form ideas, ideally focusing on one variable at a time. Children also make overgeneralizations because of their limited experiences. The concrete operational stage occurs from age 7 to 11 or 12; the typical age group is fifth graders. At this stage, children use reasoning to form ideas and tend to limit thinking to familiar events and objects. Formal operational, the final stage, begins around age 12 through adulthood. At this stage, adolescents think abstractly and manipulate ideas mentally (Mooney, 2013; Piaget, 1954).

The developmental stages of Vygotsky and Piaget led to teaching through cooperative learning, which was-first used in the middle grades through college, but Nelson (2014), Slavin et al. (2009), Vega and Hederich (2015), and Yearwood (2011) showed cooperative learning to be a useful tool for all age groups and subject areas. In a cooperative learning setting, students work in teams or small groups to ensure each member of the group is learning.

According to Asakawa, Kanamaru, Plaza, and Shiramizu (2016), when students collaborate toward a common learning goal and make a positive contribution to one another's learning, cooperative learning has taken place. The researchers suggested that activities and lessons should be structured to create a cooperative learning environment. Cooperative learning

environments are not competitive; instead, cooperative activities give students equal opportunities to participate and allow students to work together to meet common academic goals (Asakawa et al., 2016). The students interact to accomplish achievable goals that are conducive for all students, not just the individual (Johnson, Johnson, & Smith, 2014; Vega & Hederich, 2015). Esmonde (2009), Nelson (2014), Slavin et al. (2009), Vega and Hederich (2015), and Yearwood (2011) found that cooperative learning in the classroom was facilitated by a knowledgeable teacher who initiated peer interaction while providing instruction and guidance, thus impacting student achievement and engagement in the classroom.

Dean, Hubbell, Pitler, and Stone (2012) discussed the five elements of cooperative learning. The first is positive interdependence, which ensures that success by one student promotes success for all group members. An establishment of a cooperative goal and resources is distributed equally to help students understand the concept *sink or swim* together. Second, face-to-face promotive interaction enables students to encourage and activate the efforts of others to achieve and learn. Discussions are encouraged among group members, and students are taught the importance of effort and how to provide recognition for the effort of others. Third, individual and group accountability ensure that contributions are made collectively while learning individually. When optimal group sizes are established and individual assessments are included, students understand that the success of the group depends on each persons' contribution. Fourth, interpersonal and small-group skills ensure that effective group skills are clearly understood by all members. Group skills, such as communication, making decisions, conflict resolution, trust, and leadership, are provided through ongoing instruction. Finally, group processing promotes reflection of the effectiveness and success of each individual and the

group. The instructors provide a designated time to reflect and provide specific questions or sentence stems to drive focus.

According to Vega et al. (2015), in a traditional classroom setting, students generally work independently to achieve goals and to not communicate with peers, or time may not allow for much interaction in the classroom. This type of instruction tends to have students focus on their own success. However, with the incorporation of cooperative learning, seen in most departmentalized settings, students can focus on the successes and failures of peers. Exploration, manipulation, and influence of the environment provide connections to learning and cognitive development individually and with peers (Bandura, 2001). The opportunity to work together with peers promotes social interaction and invokes an increase in cognitive development (Vega & Hederich, 2015).

Related Literature

The departmentalized setting consists of one teacher who teaches one or more subjects to different students throughout the school day, and the traditional setting consists of one teacher who teaches all core subjects to one group of students for most the school day. An investigation, pertaining to the role of the teacher in student academic achievement, has been found in studies by Nelson (2014), Slavin and Lake (2008), Slavin et al. (2009), and Yearwood (2011). Each study found no significant difference in the academic achievement of students in a departmentalized setting for reading. These studies used the social constructivist theory as the basis for their research, which, in turn, validates the foundation for the research design and theoretical framework for this study.

Recent relevant research aligns with reading and mathematics achievement levels in the departmentalized and traditional setting. Studies by Kent (2010), Moore (2008), and Van

Houten (2012) found no significant difference in the reading test scores of departmentalized and traditional fourth and fifth grade students. A study by Skelton (2015) found a significant difference in results that favored the traditional instructional setting. These studies did not focus on the academic achievement of subgroups (e.g., race and/or gender).

Based on departmentalized and traditional reading instruction, little recent research deciphers which instructional setting yielded higher levels of student achievement. Various researchers (Mitchell, 2013; Skelton, 2015; Van Houten, 2012; Yearwood, 2011) delivered pertinent details in relation to the effectiveness of instructional setting, departmentalized or traditional, on student achievement at the elementary level. Studies by Mitchell (2013), Van Houten (2012), and Yearwood focused on individual students, while Skelton (2015) focused on individual schools.

Skelton (2015) conducted a quasi-experimental study, which compared fourth through sixth grade students' academic performance, as measured by the Mississippi Criterion Test (MCT2), in departmentalized and traditional classroom settings. The researcher also focused on the grade level rather than individual students. In all, 242 schools were included in this study for serving fifth grade students. Of the 242 schools, 213 were departmentalized, and 29 were traditional. Skelton reported that the sample size was extremely unbalanced, but for the MANOVA, it is required there be more cases in each group than there are dependent variables. Therefore, the assumption was met. Rather than run several ANOVAs, the MANOVA was applied to determine if there were differences in percentages in students' test scores through the 20092013 school years.

For fifth grade reading achievement, Skelton (2015) found no statistically significant difference with a significance level of $p = .056$ ($p > .05$), therefore rejecting the null hypothesis.

The results of the 2010 and 2011 difference in percentage of performance levels favored the departmentalized classroom setting with a mean of -.14, with a difference in mean of -1.91 between both structures. The results of the 2011 and 2012 as well as the 2012 and 2013 difference in percentage favored the traditional classroom setting with a mean of 14.16 and 7.22, with a difference in mean of 8.22 and 3.4 respectively.

The results of Skelton's (2015) study were consistent with the results of studies by Mitchell (2013) and Yearwood (2011); however, the studies by Mitchell and Yearwood focused on collective groups of students rather than on individual schools. Mitchell's nonexperimental, correlational study focused on the results of sixth grade data and possible performance increases on the California Standards Test (CST) from fifth grade data of students who were in departmentalized or traditional classrooms from 2010-2012. In all, 2,157 students were instructed in a departmentalized setting, and 1,269 were instructed in a traditional setting for a total of 3,426 participants. The population of students involved consisted of 82% Hispanic, 16.6% African American, and 1.4% listed as other with 82.5% economically disadvantaged, 50.4% male, and 49.6% female. For the English language arts test, 35% of students scored proficient or above.

Mitchell (2013) used hierarchical multiple regressions to analyze the scale scores to determine how classroom structure contributed to students' academic achievement. Scale scores ranged from a low of 150 to a high of 600 with performance levels of advanced, proficient (350), basic (300-349), below basic (271-299), and far below basic (150-270). Because of this study, Mitchell found that classroom setting did not have a meaningful impact on student achievement. However, Mitchell found, "Higher scores in ELA were associated with previous higher test scores in ELA, students proficient in English, female students, and students taught in self-

contained classrooms" (2013, p. 58). Mitchell concluded that after examining the regression coefficients, prior achievement and gender were revealed as the significant predictors of ELA when $p < .05$.

Mitchell also used a 22-item questionnaire to capture the perception of teachers regarding what type of classroom structure was best for sixth grade students. In all, there were 36 respondents, in which 25 were departmentalized teachers, and 11 were traditional teachers. The demographics of the teachers included 14 males and 22 female respondents; 31 respondents had more than 5 years of experience, 28 respondents had experience in both settings, 30 respondents had a master's degree or higher with a doctoral degree, and 6 were English majors. Out of the 36 respondents, 28 agreed or strongly agreed that teachers who taught in a departmentalized setting had more expertise and knowledge in core subjects taught; 7 out of the 11 traditional teachers were a part of this group. Conversely, 21 out of 36 teachers felt that collaboration between teachers of other subjects was minimal in a departmentalized setting, and 29 felt that teachers in a traditional setting had more flexibility with instructional time.

Yearwood's (2011) causal-comparative study used the Georgia Criterion Referenced Competency Test (CRCT) to measure fifth grade students' reading and math achievement scores in departmentalized and traditional classroom settings. Twenty-nine elementary schools and a convenience sample of 2,152 fifth graders participated in this study. Nonrandomized groups for this *ex post facto* study were formed. Using the 2008 CRCT scores as a covariate, the researcher used the ANCOVA calculation to determine if the achievement scores differed from the 2009-2010 CRCT scores. The scores for the CRCT were categorized into three performance levels: Exceeds (850-900), Meets (800-849), and Does Not Meet (below 800). The statistical difference for this analysis was determined based on an alpha of $\leq .05$.

Yearwood's (2011) study consisted of a large sample size, which helped to ensure test score data had a normal distribution. In all, 16 departmentalized schools with 1,182 participants and 13 traditional schools with 966 participants in reading instruction were included in this study. Most of the participants were White (72.8%); Hispanic students made up 16.8% of the group, and all other ethnic groups represented a little more than 10% of the group.

The descriptive statistics for Yearwood's (2011) study showed the mean for 2008 scores for traditional students was 838.03, and the mean for 2010 scores was 832.90; the mean for departmentalized scores for 2008 was 834.70 and the mean for 2010 scores was 832.73, which showed there was not a substantial impact on the significance level. It was found that the 2008 scores explained the 49.8% of the variance in 2010 reading scores. Although there was not a significant difference in students' scores, at 95% confidence intervals and after the removal of the effect of the covariate, it was found that students in a departmentalized setting did score 1.89 points higher on the CRCT than did students taught in a traditional setting.

Developmental Reading and Fluency

Children acquire language development before reading skills are developed. Language and reading skills are inhibited by rule systems and cognitive development constraints (Stone, Silliman, Ehren, & Apel, 2004; Yearwood, 2011). According to Beers (2006), systemic and organized strategies are used when students learn to read. Along with strategies, such as word recognition and comprehension strategies, the facilitation of development and a steady growth of a reader's basic knowledge develop the foundation of reading instruction (Pruisner, 2009; Yearwood, 2011).

According to Chall (1976), reading development progresses in stages. The pre-reading stage (i.e., preschool to kindergarten) takes place when the child begins to accumulate

knowledge and develop auditory, visual, and visual motor skills needed for the beginning stage of reading. Children begin to identify and name most of the alphabet. The child also begins to write his or her name and/or can transcribe letters that are dictated to him or her. Chall also documented that some children can recognize common signs and name brands. Picking out favorite words from literature depicts a beginning stage of reading task. During the developmental stage, three-year-old children pretend to read books while holding the book the correct way, using their finger as a pointer, and turning pages one at a time. Most three-year-old children use the pictures in books to make connections to the words they are saying. Early researchers (Chall, 1967; Durkin, 1966; Jansky & de Hirsch, 1972) suggested the skills, knowledge, and abilities acquired at this stage were largely related to future success in reading acquisition.

According to Chall (1976), stage one (i.e., initial reading or decoding) occurs around first and second grade. At this stage, children begin to take control of their language by putting parts of words together to form a *whole* word. Children try to understand what letters are for and why changing one letter will produce an entirely different word. Children also try to understand their mistakes while reading. Substitutions are another part of this stage. At this point, the child would move into a developmental stage of engagement in reading for understanding of words and structure of text.

Stage two represents a stage for repetition for students in grades two and three (Chall, 1976). By this stage, students have gained smoothness and fluency built up from the previous stages. Children focus on high frequency words and decoding of familiar texts, which is a time to confirm what they already know. Chall posited that the best way to nurture the development of the child at this stage was to provide the opportunity to read and reread familiar text. This

statement aligns with Mraz et al. (2013) who suggested that practice was the key to becoming a more fluent reader. Essentially, "The greater the mount of practice, the greater the immersion, the greater the chance of developing the fluency with print necessary for the new difficulty to come--the acquisition of new ideas in Stage three" (Chall, 1976, p. 32)

Reading for learning in grades four to six represents Chall's (1976) last stage of reading development. Students begin to read to acquire knowledge during this stage. This stage is where students read to learn; thus, a level of comprehension and higher order thinking is achieved (Boyle & Scanlon, 2010). Students begin to read more informative text to master ideas and search for facts and concepts related to real world experiments and experiences. Although Chall shared his hypothesis in the late 1970s, the developmental stages are still as progressive. The need to understand nonfiction text is fundamental to mastering stated objectives and standards.

Fluency is simply defined as the ability to read text with precision and accuracy at each individual's reading level (Chall, 1976; Henry, 2010). The ability to read a children's book fluently at the age of three does not mean a 3-year-old can read all books at all levels. The development of fluency occurs at every stage of life as individuals acquire new words and read across genres. As Chall (1976) and Boyle and Scanlon (2010) expressed, fluency has a role in the development of reading skills. Fluency is the foundation that supports the goal of reading comprehension (Author, 2009; Mraz, et al., 2013). Beginning with phonemic awareness, working with individual sounds and words, and moving forward to reading acquisition, a compelling relationship exists between the two and the development of fluency (Henry, 2010). Fluency bridges the gap between recognizing words and understanding of text.

An important theory in fluency development is automaticity, which means the ability to read words in a given text correctly and without effort with the ability to attain meaning while

reading. During this *automatic* reading, students make connections between the text, personal experiences, and ideas derived from what is being read (Henry, 2010; Mraz et al., 2013; Young & Rasinski, 2009). Henry (2010) elaborated in the following:

> Fluency, influences comprehension: non-fluent readers experience the text in chopped-up segments, seeing little flow or meaning behind the string of single words. Fluent readers, on the other hand, experience the text as a whole and are able to perceive the meaning behind the words and develop a personal understanding of the author's message. (p. 71)

Automaticity and the ability to devote attention to decoding words demonstrate a pivotal role in developing fluency (Mraz et al., 2013).

Prosody is a second theory defined by Mraz et al. (2013) and Young and Rasinski (2009). Prosody means the student reads text accurately with expression and appropriate phrasing. Theoretically, students should reflect an understanding of applying meaning to phrases and syntax (i.e., the organization of words in sentences and paragraphs). Meaning through the oral interpretation of texts tends to engage and motivate the reader to read fluently, while providing a link between prosody and full understanding of text. An extension of prosody is engagement theory. At this stage, students are engaged in the text, can read fluently while making meaning, and read with expression (Mraz et al., 2013). According to Mraz et al., when the student engages in reading and reads fluently, the next step involves focusing on making meaning, making connections, as well as elaborating and reflecting on concepts.

Expectations for Instruction in Virginia

The No Child Left Behind Act of 2001 aimed to close the achievement gap in the areas of reading and mathematics. Student background, home-life, or academic abilities were not considered factors in the overall achievement of students (Lee, Liu, Amo, & Wang, 2013).

Common Core states are under federal programming, such as Race to the Top, to create common college and career readiness standards to obtain results of proficiency for all students (Lee et al., 2013; Porter, MccMaken, Hwang, & Yang, 2011). In Virginia, the Department of Education (VDOE, 2012b) expects teachers will provide instruction based on state objectives, also known as standards of learning, the curriculum scope and sequence, and the curriculum framework. All students statewide are expected to learn the same information and skills for all content areas at their respective grade levels (Segool, Carlson, Goforth, von der Embse, & Barterian, 2013). End-of-course standardized tests were created to make the assessment results objective rigorous enough to compare student results and link those results to rewards and sanctions for stakeholders (Farah, 2013; Segool et al., 2013).

Students are tested at the end of the year on the content learned for the current school year as well as content acquired from previous years. For example, fifth grade students are tested on all fifth-grade standards as well as some fourth and third grade standards. These tests are given to determine students' level of proficiency, which are scaled at below grade level, on grade level, or above grade level.

Fifth grade students in Virginia test in mathematics, science, and reading at the end of the school year. These tests are based on the SOL objectives found in the VDOE curriculum framework. According to the VDOE (2012b), the SOLs are established as the minimum of what students should know and be able to accomplish independently before they leave each grade level, beginning in third grade. The VDOE (2015a) detailed the purpose of the SOL test as follows:

> SOL results inform parents and communities about whether students—as individuals and collectively—are meeting the commonwealth's expectations for achievement in English,

> mathematics, science and history. SOL tests allow the state Board of Education to identify schools that need assistance and support. The assessments also provide an objective means for measuring achievement gaps between student subgroups and for determining the progress of schools, divisions and the state toward closing these gaps. (p. 1)

Fifth grade students from Virginia are accustomed to taking the SOL because standardized testing begins in third grade. Students from other states may also be accustomed to standardized testing because of NCLB requirements, even those students who used public school curriculum guides in a home school setting. Before any assessment is given, students in elementary school are required by law to receive 5.5 hours of instruction daily for 180 days. This requirement includes daily mathematics, reading, science, and social studies with additional time in place for recess, lunch, and encore classes such as physical education, music (VDOE, 2000). At the elementary level, school districts may modify the schedule to allow for more language arts instruction. Although math may be granted a 60 to 90-minute block and science and social studies may be granted a 30 to 45-minute block; a 90-minute to 120-minute block may be granted for reading to cover instruction of all language arts components on the test, which consists of grammar, writing, and reading.

Along with specific instructional time frames, academic achievement is also an important component in the instructional framework. The VDOE expects students to learn the relevant grade level material before being promoted to the next grade. Each school shares responsibility for developing a process to identify and recommend appropriate strategies to address learning or development of any child struggling in their educational settings. Although students are not held

back solely based on their SOL scores, reading and/or mathematics remediation may be provided to students in kindergarten through twelfth grade by a recovery program provided by the school.

Role of the Teacher in Virginia.

According to Ryan and Burke (2013), teachers are under pressure from the community and elected officials to maintain standards and fulfill daily expectations. While under pressure, teachers are under constant managerial monitoring, appraisal systems, and testing regimes (Ryan & Burke, 2013; Thomas, 2011). Accountability policies in public education focus on the evaluation of teachers, schools, and students (Figlio & Loeb, 2011; Gershenson, 2016). Depending upon state policies or socioeconomic status of the school, teacher evaluations are linked to performance incentives (Figlio & Loeb, 2011; Gershenson, 2016; Heinrich & Marschke, 2010). In 2011, the VDOE approved a guidance document about the professional practice of teachers. This document included seven performance standards, which represent the complexity of teaching. These standards are broken down into key elements for all teachers and key elements for teachers of specific core subject areas.

In the first standard, professional knowledge, teachers are to provide relevant learning experiences to demonstrate an understanding of the developmental needs of students, the curriculum, and subject matter. Professional knowledge includes knowledge of subject matter and knowledge of instructional strategies to enhance student performance on curriculum standards and assessments (Grofischedl, Harms, Kleickmann, & Glowinski, 2015; Paulick, Grossschedl, Harms, & Moller, 2016). Teachers of English must use students' prior knowledge to drive instruction to develop, as well as enhance, English skills. Language arts resources and techniques are to be used to maximize student learning. In language arts, the areas of interest are reading, writing, speaking, listening, and research. Key element 7 of the standard requires that

teachers be knowledgeable in a variety of reading strategies that will be effective for students to use in a variety of situations, both linguistically and contextually (Alatalo, Arbete, Dalarna, & Akademin Utbildning, 2016; Lundberg, Larsman, & Strid, 2012).

Instructional delivery, the third standard, encourages teachers to meet individual learning needs of students by engaging their learning through a variety of instructional strategies. Differentiated instruction, implementation, evaluation, and adaptation of numerous types of delivery methods must be used to engage and enhance student learning experiences (Robertson, Dougherty, Ford-Connors, & Paratore, 2014). Teachers of English are to ensure active engagement through projects and collaborative work. Teachers are also challenged to facilitate and encourage students in self-directed learning and inquiry.

One of the key elements under the instructional delivery for Virginia's professional standards, differentiation, often represents the missing piece for advancing both struggling students and higher achieving students (Robertson et al., 2014). Planning and differentiation are essential for meeting the needs of all students. Robertson et al. proposed that instructional planning considers the needs of the students and helps teachers to conceptualize how to implement strategies that are motivating ad engaging, instructionally intense, and cognitively challenging. Kretlow, Wood, and Cooke (2011) explained, "Professional development that promotes general educators' use of research-based practices that can be sustained and delivered with fidelity as an essential component to support and sustain teachers" (p. 235).

The instructional planning standard also requires teachers to select and create materials that align with the curriculum and the developmental needs of the students. The planning process includes establishing objectives, implementing instructional tasks and strategies, and organizing students and materials (Ha-Young & Housner, 2010). Incorporating real-world texts

and technology, as well as guiding students into understanding how important language skills are, will help students meet school expectations and have continued success beyond the classroom. These standards are implemented for teachers who serve in the traditional classroom setting or the departmentalized setting. It is important to understand what is required of teachers to consider or eliminate factors that could contribute to the results of students' academic achievement in past studies, current studies, and future research.

Reading Instruction in Virginia.

The guidebook, *Elementary Reading Program Planning and Implementation Tool*, was written for administrators, teachers, and coaches to help develop, implement, sustain, and refine reading programs throughout the state of Virginia. The planning tool aligns with the Virginia Standards of Learning and demonstrates the knowledge and use of Virginia standards. These standards detail daily instruction, which allow administrators to ensure that concepts and terminology are well understood by staff members. The administrator has correlational charts accessible for teachers to use. Correlational charts provide references to instructional approaches and materials to facilitate planning and instruction (VDOE, 2008).

The guidebook notes that effective reading plans are important to student success. Effective reading plans ensure that professional development for teachers include ongoing, adequate materials that are available to support quality instruction; in addition, principals perform walk-throughs to monitor instruction. The plan also recommends that school administrators maintain a comprehensive assessment plan for reading and a plan for data management. A team composed of teachers and reading leaders meet to review data and use the results to guide instruction effectively. After the team has discussed assessment data, interventions are implemented to accommodate struggling readers (VDOE, 2008).

To ensure implementation of the reading program and the guidelines are effective, the school administrator should have a timeline in place with dates for completing tasks and scheduled meetings to review the data, reflect on tasks, and discuss next steps. Scheduling and timelines are especially important for a departmentalized program to give the teachers who do not teach reading the opportunity to provide input and keep up with guidelines. All faculty members share a pivotal role in the success of an implemented school based reading program.

To help students and teachers improve, the VDOE received a grant from the United States Department of Education to fund a project called the *Virginia State Literacy Plan* to address the reading needs of children from birth until they graduate high school. To sustain this project, the State Literacy Committee created a goal that read:

> The goal of the Virginia State Literacy Plan is to ensure that all children have the necessary skills to become successful readers, writers, speakers, and listeners with the critical thinking skills that are required to be successful as they progress and transition through the stages of their lives from birth through high school graduation. (VDOE, 2011b, p. 1)

In the literacy plan, under the instruction and interventions improvement goals, the first goal was to promote a comprehensive approach to literacy. One strategy included in that goal was to "encourage schools to establish Literacy Teams to develop and oversee plans that are inclusive, streamlined, data-driven, and include progress monitoring and accountability measures" (VDOE, 2011b, p. 12). This goal fits within the departmentalized instructional model because teachers can form teams of reading *specialists*. Teachers can focus on reading data, interventions, assessments, and resources that meet the needs of each student without the responsibility of monitoring two or three other core subjects.

Reading: Gender and Minority/Nonminority Status

Gender gaps in reading/literacy have been an issue for many years. In a longitudinal study by Gates (1961), girls in grades 2 through 8 from 12 schools in 10 states, outperformed boys in fluency, vocabulary, and level of comprehension. According to the National Assessment of Educational Progress (NAEP, 2016), Gates's findings remain true as reported by the results for reading proficiency for fourth grade males and females. In 1992, the overall achievement levels for males who were proficient or advanced in reading was 25%. Between 1992 and 2015, a steady rise continued to 33%. In 1992, females' level of proficiency was 32% and continued to rise to 39% by 2015. Throughout the span of 23 years, there was never a time where males and females were at the same level of proficiency, or where the males surpassed the females. Robinson and Lubienski (2011) attested that a discrepancy in reading achievement for males tended to occur between kindergarten and third grade.

Schwabe, McElvany, and Trendtel (2015) examined one of the possible causes of male reading deficiency as it related to assessment scores. Schwabe et al. described the layout of state assessments to consist of multiple choice and constructed-response items, with a growing number of response items being added over recent years. Constructed-response items tend to require receptive and productive language skills, as well as a greater amount of effort, which girls seem to possess (Haladyna & Rodriguez, 2013; Schwabe et al., 2015). Because of this study, 10-year-old girls did significantly better on the constructed-response items than did boys who were equally skilled in reading.

Gender gaps are statistically a contributing factor in reading achievement, but research by Fantuzzo, LeBoeuf, Rouse, and Chen (2012); Rothstein (2015); Sharkey (2014); and White et al. (2016) also explored the academic achievement of African American male students. The NAEP

(2016) reported that in 1992, the overall percentage for African Americans who were proficient or advanced in reading was 17% and Hispanics was 7%. Between 1992 and 2015 there was a steady decline to 15% for African Americans, but a significant increase to 25% for the Hispanic population. However, the European American population was at 73% proficient or advanced in 1992, but the level of proficiency steadily declined to 51% by 2015.

Fantuzzo, LeBoeuf, Rouse, and Chen (2012) investigated relations between reading achievement and evidence-based risk factors. The researchers examined the achievement gap between third grade African American boys and their European American peers, the *risk gap* between the two groups, and the relationship between task engagement in the classroom and academic outcomes. The participants consisted of more than 8,800 students in a school district in Philadelphia. African Americans represented most of the group at 65.9% and European Americans at 14.6%. The result of the study showed that African American boys had significantly lower assessment scores than did European American boys. Fantuzzo et al. also found that African American boys were prone to more risk factors, such as homelessness, lead exposure, and maltreatment. On the contrary, African American boys with greater school attendance had fewer classroom engagement problems and higher achievement scores in reading than did their European American peers.

Taylor (2012) found the same to be evident between Black girls and White girls; however, the results were not as significant. Black girls tended to experience some of the same risk factors as did boys, but educational outcomes did not appear to be affected (Barbarin, 2010; Taylor, 2012). Black girls were more likely to internalize behaviors while Black boys were more likely to manifest external behaviors. Matthews, Kizzie, Rowley, and Cortina (2010) found that advanced learning-related skills and pro-social interpersonal skills were more evident in Black

girls than in boys, which may put girls in a better position to conform to classroom expectations than boys. In an analysis of Texas achievement data, Black girls and Latino girls scored lower than did their White female peers in reading achievement according to the 2011 Texas Assessment of Knowledge and Skills assessment (Larke, Webb-Hasan, Jimarez, & Li, 2014).

A longitudinal study by Condron, Tope, Steidl, and Freeman (2013) focused on racial segregation and the achievement gap in math and reading between Black and White students. Condron et al. discussed school segregation and achievement disparities, which are largely controlled by the economic divide between the Black and White communities. Lower incomes, higher poverty rates, and less wealth were contributing factors, which affected students' education (Condron et al., 2013). According to Condron et al. and Goldsmith (2010), in some areas in the United States, most White students and most Black students attend separate schools, which means students have the advantage or disadvantage of the resources provided by the surroundings. The advantages are typically in favor of White students because of economic disparities. Rothstein (2015), Sharkey (2014), and White et al. (2016) discussed that intergenerational economic and social disadvantages, which impact student performances, are prevalent, and opportunities for mobility are rare. Because of the study by Condron et al., it was found that the achievement gap in reading declined when Black students were more exposed to White students in school and community resources.

Various factors inside and outside of school could contribute to the gender gap in reading. Recent research by Nelson (2014) and Yearwood (2011) focused on various factors, but none focused on the delivery of instruction. However, research by Johnson (2013) and Burke (2010) found that male students benefited more than did girls from a traditional classroom instructional setting. Johnson and Burke declared that boys tended to be more active than were

girls and could benefit from the space to spread out and move around. Boys also tended to become introverted when misunderstanding a concept and were less likely to ask for help when one teacher was preferred over another. In the traditional setting, males had consistency in routines and were also able to build a relationship with a single teacher (Burke, 2010; Johnson, 2013; Kommer, 2006).

Classroom Instructional Settings

Organizational structure is a long-debated topic amongst administrators, stakeholders, and educational institutions (Parker, 2009). Over the decades, instructional settings have evolved from one room schoolhouses, to grade-level schools, to departmentalization in elementary school. According to Parker (2009), much debate exists over the effectiveness of traditional instruction and departmentalized instruction. Parker's study focused on the psychological impact students face when transitioning from elementary school to middle school. Parker found the elementary setting did not have an initial impact on transition, but there was a longitudinal effect on students' perception of classroom climate and a significant increase in students' self-concept.

Traditional Instruction

A traditional classroom has been the original classroom setting at the elementary level for several years because of the number of advantages. The traditional instructional setting consists of a class with one teacher who teaches all core subject areas to one set of students for much of the school day (Chang, Munoz, & Koshewa, 2008; Hood, 2010; Nelson, 2014; Yearwood, 2011). Chan, Terry, and Bessette (2009) found that the traditional classroom setting was favorable to teachers and parents because it helped students, particularly in the lower grades, transition from home to school by representing a home-like environment. Chan et al. (2009) also claimed that

the teacher reflected a parental image, which comforted and nurtured the child in their new setting.

Studies by Liu (2011), Moore (2008), and Skelton (2015) showed that the traditional setting allowed teacher-student relationships to form and gave teachers the opportunity to get to know their students on an individual basis. When the teachers get to know the students in terms of achievement and development, teachers can direct instruction based on student needs (Liu, 2011; Moore, 2008; Skelton, 2015). In Chang's (2008) study on departmentalization and student connectedness, it was found that the traditional setting allowed teachers time to learn the needs of students, which was reflected in students' academic success. When in a departmentalized setting, teachers are not always allowed to teach the subject of their choice, which can hinder their ability to engage students fully and continue to be engaged themselves (Liu, 2011).

Jacob and Rockoff (2011) found that assigning teachers to a specific grade level over a period of time was more effective in the academic achievement of students than was grade switching year after year. According to Jacob and Rockoff, principals typically consider factors, such as experience and observations, when choosing grade level assignments for teachers. However, with traditional teaching, and the many subject areas teachers must become familiar with and knowledgeable of, teachers need the opportunity to grow in the subject matter (Kretlow et al., 2011; Robertson et al., 2014). Conversely, this notion may not apply if the teacher voluntarily chooses to teach another grade level. This choice may have been made based on the confidence level of the teacher and their desire to teach elsewhere (Jacob & Rockoff, 2011; Range, Pijanowski, Holt, & Young, 2012).

Jacob and Rockoff (2011) also discussed a study that followed more than 30,000 teachers in North Carolina and a similar study in New York City. It was found that a teacher who

received the same assignment year after year would begin to show an improvement in student academic scores approximately 50% faster than a teacher who never repeated a grade level. These factors could be a contribution to the reasons why a conflict existed in the research, which showed one type of classroom setting was not more beneficial than was the other.

Departmentalized Instruction

To meet the demands of NCLB, administrators and school leaders began to look at restructuring schools to help boost student academic achievement and raise test scores (Gewertz, 2014; Skelton, 2015). One strategy was to bring in the middle and high school arrangement of departmentalized classrooms into the elementary school. A departmentalized instructional setting can be defined as a class in which one or more teachers teach one or two subjects to two or more groups of students throughout the school day (Canady & Retting, 2008; Chang et al., 2008; Nelson, 2014; Yearwood, 2011). Departmentalizing also helps students with the transition to middle school, which includes moving about to several classes, keeping up with assignments, and interacting with different teachers throughout the day (Chan & Jarman, 2004; Delviscio & Muffs, 2007; Disseler, 2010; Nelson, 2014).

In 2001, a regional administrator in Florida departmentalized 40 schools and reported exponential growth in student performance on the end-of-course standardized tests. This administrator attributed this success to departmentalized instructors' opportunity to focus on fewer core subject areas and to improve content knowledge and delivery by attending conferences of choice or on-going professional development (Hood, 2010; Nelson, 2014). The teachers were striving to become experts in the core subjects they were teaching. Chan and Jarman (2004) explained how difficult, to nearly impossible, the task could be for intermediate elementary teachers to master every core subject area in a traditional instructional setting and to

teach effectively. This, in turn, may cause teachers to focus on the subject that they are most knowledgeable in teaching or most comfortable teaching. Subjects, which teachers are not comfortable with, may not be taught as well or may not be taught at all (Chan & Jarman, 2004). To alleviate some of the pressure of having to become an expert in all core subject areas, some schools have implemented departmentalized classrooms.

As with traditional teaching, Jacob and Rockoff (2011) found that in the elementary school, shifting teacher placements, which was based on the subject area in which the teacher was most effective, resulted in a substantial increase in student academic achievement. Jacob and Rockoff even proclaimed that a shift in placement and allowing teachers to teach a subject or subjects they were most comfortable with were more beneficial than firing the bottom 10% of teachers with the lowest test scores. Albeit, a shift of this magnitude would require structural changes and teacher *buy in*.

To implement departmentalization in an elementary school successfully, Chan et al. (2009) and Jacob and Rockoff (2011) suggested teachers must have a willingness to be on a team, and schools accommodate team proximity. It is also important for teachers to carry out the content effectively, and that all stakeholders, which includes parents, administrators, and teachers, are supportive of the change. Finally, scheduling must be implemented effectively. Baker (2011) also suggested that schools review the norms that were already in place at the school, analyze the interests of all stakeholders, and administrators become familiar with the knowledge base of the teachers who were teaching the curriculum.

Similar to the traditional instructional setting, there are benefits to the departmentalized setting. One of the advantages of departmentalized instruction include teachers' opportunity to become specialists in the subject area or areas that they teach, even if it is a subject that was

chosen for them (Abbati, 2012; Nelson, 2014; Skelton, 2015). Becoming a specialist can be achieved through interdisciplinary teams for thorough and focused planning, which can reduce the amount of time that is typically needed to plan (Chan et al., 2009; Eger, 2010; Johnson, 2013; Schmoker, 2006; Skelton, 2015). Studies have also shown that teacher morale is high and retention rates for teachers are high when they are satisfied in their positions (Chan & Jarman, 2004; Johnson, 2013; Nelson, 2014; Strohl et al., 2014).

Teachers and students benefit from departmentalized instruction. Opportunities exist for student engagement, cooperative learning, and cooperative activities, which create pathways for social interaction (Nelson, 2014; Slavin et al., 2009). Van Tassel-Beska et al. (2008) found that teachers integrated more technology in the departmentalized classroom during activities to take advantage of the opportunities for differentiated instruction. These researchers also found that teachers had the opportunity to recognize and assess multiple intelligences and meet the needs of diverse groups of students.

Summary

Educators nurture, grow, and teach the students they encounter on a daily basis. These teachers are expected to make a difference in the reading achievement and mastery of state objectives as mandated by the U.S. Department of Education. Educators are tasked with delivering effective instruction while striving to close the achievement gap between subgroups such as race, gender, and special needs. In efforts to close the achievement gap, decisions can be made regarding what instructional setting (e.g., traditional or departmentalized) would be beneficial to all students on a daily basis. Research by Disseler (2010), Jacob and Rockoff (2011), and Nelson (2014) showed reading teachers working in a departmentalized instructional setting tended to be more knowledgeable in the content taught. Teachers are described as feeling

comfortable delivering instruction and creating engaging lessons, which create a positive environment. The teachers' positivity regarding classroom placement reflects in the academic achievement of the students. Conversely, teachers in the traditional setting feel stronger relationships are developed with students, and themes can be easily integrated across the curriculum.

Studies by Kent (2010), Moore (2008), and Van Houten (2012) showed conflicting results about the effectiveness of instructional settings, which rendered a need for further research. Liu (2011), Moore (2008), and Skelton (2015) suggested that the traditional classroom was the best way to meet the emotional needs of students. Nelson (2014) and Yearwood (2011) declared departmentalized classes provided a form of relief for teachers, and departmentalizing improved the quality of instruction provided by teachers. All studies related to this research was conducted in urban or rural areas. This study will focus on students in suburban schools. The performance of certain subgroups (e.g., gender and race) may be impacted by a particular classroom instructional setting.

CHAPTER THREE: METHODS

Overview

The purpose of this study was to determine if higher levels of reading proficiency were achieved by fifth grade regular education students based on the classroom setting, departmentalized or traditional, as measured by the Virginia Standards of Learning assessment. Chapter Three provides an overview of the research design used for the study, followed by the proposed research questions and hypotheses. The participants and setting, instrumentation, and procedures are incorporated in this chapter. Finally, techniques used in the analysis of the data are provided to offer a concise rationale of the statistical procedures involved.

Design

A nonexperimental, causal-comparative quantitative research design was used to evaluate the statistical difference in reading achievement scores (i.e., the dependent variable) when fifth grade students receive instruction in a traditional instructional setting or a departmentalized instructional setting (i.e., the independent variable). Reading achievement can be defined as the mastery of performance goals in reading for the purposes of data analysis of student growth and curriculum development (Sideridis, Stamovlasis, & Antoniou, 2015; VDOE, 2012a). Reading achievement scores are measured based upon student mastery of word analysis and comprehension of nonfiction and fictional text (VDOE, 2012a). The traditional instructional setting consists of one teacher who teaches all core subjects during the school day to the same group of students (Canady & Rettig, 2008; Chang et al., 2008; Hood, 2010; Nelson, 2014; Yearwood, 2011). The departmentalized setting consists of one teacher who teaches one or two core subjects to different groups of students throughout the school day (Canady & Rettig, 2008; Chang et al., 2008; Nelson, 2014; Yearwood, 2011). According to Gall et al. (2007), the

researcher cannot manipulate the variables when executing a causal-comparative design. The participants in this study belonged to previously established traditional or departmentalized groups for reading instruction. The researcher sought to analyze the interaction between instructional setting and fifth grade reading achievement scores as measured by the 2016 Virginia Standards of Learning assessment. The 2015 fourth grade reading achievement scores of students was used as a covariate. The fourth grade Standards of Learning assessments scores are measured based upon the mastery of word analysis and comprehension of nonfiction and fictional text at the fourth-grade level (VDOE, 2012a). A causal-comparative design is appropriate because the researcher sought to identify cause-and-effect relationships among the dependent variable, 2016 reading achievement scores, and the independent variable, instructional setting (Gall et al., 2007; Warner, 2013).

Research Question

RQ1: Is there a difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores?

Hypotheses

The following hypothesis was addressed:

$H_0$1: There is no significant difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores?

Participants and Setting

The participants for this study were from the second largest school district in the Southeastern region of the United States located in a large middle-to-upper income suburb. In this district, 60 elementary schools with more than 40,000 elementary students are enrolled. The district is comprised of approximately 6,500 fifth grade students. The student population of each elementary school was determined by students' preexisting assignment to a departmentalized classroom or a traditional classroom. Participants were drawn from a convenience sample of fifth grade elementary school students from eight schools in a large suburban school district during the 2015-2016 school year. Convenience sampling consists of gathering a sample of participants who are easily assessable to the researcher. (Gall et al., 2007). None of the participants received departmentalized instruction in fourth grade.

For this study, the number of participants sampled was 737 students, which exceeded the required minimum for a medium effect size. According to Gall et al. (2007) and Warner (2013), 166 students is the required minimum for a medium effect size with statistical power of 0.7 at the 0.05 alpha level for an analysis of covariance. The sample came from eight elementary schools within the district. The schools were selected based on similar demographics and Title-I status. Each school only offered departmentalized classes at the fifth-grade level. Four schools will have departmentalized fifth-grade classes, and four will have traditional fifth-grade classes. After schools were identified by the accountability office, archived assessment data was utilized. No active participants were used for this study. All classes were taught using the same curriculum standards for reading, and the participating students received a score of 0 to 600 on the fourth-grade reading SOL.

The demographics for this study consisted of 737 fifth grade participants, of which 382

were male and 355 were female. The sample consisted of 196 Hispanic/Latino students (27%), 265 White students (36%), 160 Black students (22%), 64 Asian students (.09%), 47 Bi-Racial students (0.06%), 1 American Indian student (<1%), and 4 Native Hawaiian students (<1%). The students' ages ranged from 9 to 11 years old at the time of the 2015-2016 SOL testing window. The departmentalized group consisted of 399 students, 213 males, and 186 females. The traditional group consisted of 338 students, 169 males, and 169 females. To ensure samples were taken from similar geographic and demographic areas, the eight schools were within a 10-mile radius of each other in the suburban middle-class area of the district.

The setting for this study occurred in selected schools during normal school hours. Each school used the state curriculum standards with no supplemental resources from the researcher. Naturally occurring groups were used for this study because students were selected as participants in previously established traditional or departmentalized instructional settings. Archived data for students' fifth grade and fourth grade assessments in reading were analyzed for cause-and-effect relationships between scores and instructional setting.

Instrumentation

The instrument used for this study was the 2015 Virginia Standards of Learning reading assessment. This assessment was mandated in 2001 after the NCLB Act was implemented. The assessment was designed based on grade specific, content-based objectives constituted by the state to determine level of proficiency (VDOE, 2011a). The Standards of Learning assessment is reviewed annually by the Assessment Committee to assure fairness and accuracy (VDOE, 2012c). The SOL committee consists of certified Virginia teachers, school administrators, and content specialists who review test items to ensure accuracy of content and fairness in measurement for all students (VDOE, 2012c). The purpose for this instrument was to measure

what students should know and be able to accomplish at the end of each grade level or course in all core subject areas to meet Virginia's expectations for achievement and learning (VDOE, 2015a). The test is given to inform parents, communities, and stakeholders of students' progress toward meeting expectations for achievement in all subject areas (VDOE, 2015a). The test allows the Virginia Board of Education an objective means to note achievement gaps between subgroups, identification of schools in need of support, and the progress of school divisions and the state (VDOE, 2015a).

The Virginia Standards of Learning assessment has been used in numerous studies as a tool to measure achievement to determine educator accountability and the effect the assessment may have on the school climate (Kaplan, Owings, & Nunnery, 2005; Tschannen-Moran & Barr, 2004). Nelson (2014) investigated the cause-and-effect relationship between departmentalized and non-departmentalized classroom structures and student achievement in mathematics. For the present study, the Virginia Standards of Learning assessment will help the researcher determine if there is a possible cause-and-effect relationship among classroom structure and student achievement in reading.

According to the VDOE Technical Report (2015b), the assessment relies on evidence based on test content, response processes, and internal structure to support the validity of the assessment. The Virginia assessment follows a blueprint designed to address the content standards for each core subject, thus exhibiting face validity, also known as intrinsic rational evidence. The involvement of Virginia educators also ensures that the assessment matches the blueprint specifications and that the standard of learning continues to be addressed fairly, adequately, and appropriately. The content-related evidence of validity from the blueprint comes directly from the Standards of Learning curriculum framework, which "amplifies the Standards

of Learning and defines the content knowledge, skills, and understandings that are measured by the Standards of Learning tests" (VDOE, 2015b, p. 37). Test development continues to be ongoing with the involvement of content specialists, Virginia educators, Pearson, and VDOE continuously reviewing test items.

Validity based on response processes coincides with the students' ability to use cognitive strategies to respond to test items. In reading, a student may be given a reading passage and ask to respond to a question that aligns with the passage. Passage-based items and stand-alone items for the reading test may be tied to more than one passage as a form of content integration. Passages are grade-level appropriate and vary in length, genres, and topics (VDOE, 2015b). For further validation, the internal structure of the assessment includes field tested items. The items are presented on each new SOL before being used on an operational assessment. Differentiated item functioning (DIF) is evaluated for African American and European American students and male and female students. If an item is flagged, the review team identifies the potential concern and eliminated from the pool of test items. This process ensures that test items only measure the content standards and do not disadvantage student subgroups (VDOE, 2015b).

The fifth-grade SOL Reading assessment is taken online and consists of a mixture of 40 multiple-choice and technology enhanced (TE) questions and 10 field-tested items, for a total of 50 test items. Technology enhanced questions are questions that require students to write a short response, click on multiple answers, or drag items to their appropriate place in a question. Field tested items are not used to compute student scores but are tested for potential use on future tests (VDOE, 2010). The reporting categories include 8 items for word analysis strategies and word reference materials, 15 items to demonstrate comprehension of fictional texts, and 17 items to demonstrate comprehension of nonfiction texts (VDOE, 2010).

The levels of proficiency for the SOL are measured on a scale score ranging from 0 to 600 points. A score of 0 to 399 points represents a failing score indicating the student's performance falls below grade level and the student answered at least 11 out 40 items correctly. A *pass proficient* score of 400 to 499 means that the student is performing at grade level and answered at least 25 out 40 items correctly. A *pass advanced* score of 500 to 600 indicates the student is performing at or above grade level and answered at least 35 out of 40 items correctly (VDOE, 2013c).

The SOL assessment is given face-to-face to all students. The department of education provides training to all directors of testing, who trains site-based testing coordinators, who then train school examiners and proctors. The training includes test security and confidentiality, local directions from the division director of testing, and an overview of the testing manual (VDOE, 2015b). Available accommodations for eligible students is also discussed during the training.

The Virginia SOL is both valid and reliable. The same Virginia SOL assessment should not be administered twice; therefore, an internal consistency method is used to determine reliability (VDOE, 2015b). Cronbach's Coefficient Alpha Statistics computed test score reliability and was used to test for reliability for the assessment (Gall et al., 2007). According to the VDOE (2015b), in the *Virginia Standards of Learning Assessments: Technical Report 2014-2015 Administration Cycle,* the Cronbach's alphas for the 2011 Grade 5 Reading SOL by total population (p. 51), gender (p. 53), and ethnic group (p. 54) are presented in Table 1.

Table 1

Cronbach's Alphas for the Virginia 2015 Grade 5 Reading Test

	All Students	Gender		Ethnicity	
Version of Test	Total 5th Grade Population	Male	Female	Black	White
Core 1 - Online	0.86	0.86	0.86	0.85	0.85
Core 2 - Online	0.87	0.88	0.87	0.85	0.86

Procedures

After the dissertation proposal received approval from the research consultant, the researcher presented the proposal to the committee for final approval. After the proposal was successfully defended and before any data was collected and analyzed, the researcher submitted an official Request for Permission to Collect Data to the selected county's accountability office (see Appendix A). After county approval the researcher submitted an official Request for Approval of Research Projects to the Institutional Review Board (IRB) at Liberty University for permission to conduct this study (see Appendix B). After approval was granted from IRB, the researcher contacted the county's accountability office to receive the permitted data. Once data was received via email, all data was computed and analyzed using SPSS.

For this study, only student test scores were used; therefore, the only consent needed was from the county to collect archived data. This study did not require any trainings, manuals, or explicit lesson plans. However, schools must have used the state standards actively to teach reading classes throughout the year. This protocol should be standard for all public schools throughout the county.

A gifted education teacher from the selected county acted as a liaison for the researcher and identified schools that provided departmentalized instructional settings and schools that provided traditional instructional settings for fifth grade reading instruction for the 2015-2016 school year. This procedure was done during the county wide gifted meeting. Gifted teachers were personally asked, "Does your fifth grade departmentalize in reading?" to determine possible schools to include in the study. The answers provided were placed on a spreadsheet and emailed to the researcher (see Appendix C). The researcher then used the county website to determine if the schools are non-Title I. Schools that did not respond had information available on the county website.

The accountability office also acted as a liaison to validate the researcher's information as well as provide the researcher with student demographics, 2015-2016 Reading SOL test scores, and fourth grade 2014-2015 Reading SOL scores. All information included in the assessment data, which could identify the students, was removed. Based on information received from the accountability director, students were placed in two comparison groups. Group A were students who received instruction in a departmentalized setting, and Group B were students who received instruction in a traditional setting. All materials provided were emailed to the researchers' personal email address. Data was downloaded onto a flash drive and deleted from the personal email account. The researcher was the only person with access to the materials and kept the information in a secure location on a personal computer and locked drawer.

Data Analysis

To analyze data for this causal-comparative study, the researcher used an Analysis of Covariance (ANCOVA). The ANCOVA allowed the researcher to control for initial reading scores and the difference between groups using the students' test scores from the previous year's

Virginia SOL Reading Assessment (Gall et al., 2007). The covariate sought to neutralize preexisting differences between groups on the dependent variable. In this study, the fourth grade SOL reading scores acted as the covariate. There was one year of instruction between the time of the fourth-grade reading assessment and the fifth-grade reading assessment, both given in the fourth quarter of the school year. Per Gall et al. (2007), the ANCOVA was appropriate for this study because comparison groups cannot be selected that match equally on the dependent variable. Descriptive statistics were computed for the 2015 reading SOL scores for each comparison group. Group A consisted of data from departmentalized students from the 2015--2016 school year. Group B consisted of data from students who received instruction in a traditional setting for the same year.

All assumptions were tested using SPSS for the hypothesis, which included normality, linearity, bivariate normal distribution, homogeneity-of-slope, and equal variances (Gall et al., 2007). Normality assumed that the population distributions were normal. There should be a symmetrical bell shaped curved on a histogram. To assume tenability of normality, there should be a significance level of more than 0.05 when using the Kolmogorov-Smirnov test. For the purpose of this study the researcher used the Mahalanobis distance statistic in lieu of the Kolmogorov-Smirnov test to look for multivariate outliers (Warner, 2013). The Kolmogorov-Smirnov test only looks for univariate outliers, but with the large sample the researcher sought to look for outliers within the data set for the pretest and posttest individually as well as look for relationships between the pretest and posttest collectively for the traditional and departmentalized groups (Warner, 2013). Scatter plots were used to determine linearity. The researcher looked for a linear relationship among the independent variables (i.e., instructional setting) and dependent variables (i.e., reading scores) (Gall et al., 2007). Scatter plots from a

bivariate normal distribution assumption were used to look for a *cigar shape* between the 2015 reading test (i.e., covariate) and the 2016 reading test (i.e., dependent variable) (Warner, 2013). Homogeneity-of-slope was checked to ensure that there was no significant interaction between all groups in the study. Finally, Levene's Test for Equality of Variance was used to assume that the population distributions have the same variances. The researcher looked for a significance level greater than .05 to assume equal variance (Gall et al., 2007; Warner, 2013).

Partial eta-squared, which indicates the proportion of variance in the 2016 reading scores, is explained by instructional setting, was used to determine effect size. The calculation ranges from 0-1 with a medium effect size of 0.06 (Warner, 2013). The alpha level for significant will tested at the 0.05 level (Gall et al., 2007; Warner, 2013). When reporting the results for this study, the researcher included all assumption testing, descriptive statistics, degrees of freedom, observed *F* value, significance, effect size, and power for the ANCOVA (Gall et al., 2007).

CHAPTER FOUR: FINDINGS

Overview

The purpose of this quantitative casual-comparative research was to provide educators with data pertaining to the effect of classroom instructional setting on the Virginia Standards of Learning reading test scores. Archival data from 737 students was used. Descriptive statistics were used to analyze normality for the difference scores. The ANCOVA model was used to test the hypothesis and to control for the previous year's reading assessment scores, and the ANOVA was used to analyze the difference between mean reading scores over a two-year period.

Research Question

RQ1: Is there a difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores?

Null Hypothesis

$H_0$1: There is no significant difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores.

Descriptive Statistics

Table 2 displays the frequency counts by instructional setting. Of the 737 participants, there were 399 students who received departmentalized instruction (54.1%). In addition, there were 338 students who received traditional instruction (45.9%) as shown in Table 2.

Table 2

Frequency Counts for Instructional Setting (N = 737)

Setting	*n*	%
Departmentalized	399	54.1
Traditional	338	45.9

The descriptive statistics for the Standards of Learning reading scores are displayed in Table 3. The pretest scores for all students had a mean of $M = 450.61$ while posttest scores had a mean of $M = 462.63$. As shown in Table 3, this resulted in an average difference of $M = 12.02$. In addition, there was a 302-point gap between the lowest reading difference score (-140) and the highest reading difference score (162).

Table 3

Descriptive Statistics for Standards of Learning Reading Scores (N = 737)

Reading Score	*M*	*SD*	Low	High
2014-2015 (Pretest)	450.61	65.24	275	600
2015-2016 (Posttest)	462.63	65.59	288	600
Reading Difference [a]	12.02	45.74	-140	162

[a] Reading Difference = Posttest – pretest

Results

Assumption Tests

For the ANCOVA model in the study, five different assumptions tests were performed: normality, linearity, bivariate normal distribution, homogeneity of slope, and equal variances. Initially, data from 758 fifth grade students were collected. Box plots were used to identify

univariate outliers (See Figures 1 through 3). In round one, 19 univariate outliers were identified (See Figure 1). In round two, two additional univariate outliers were identified (See Figure 2). This resulted in a new sample size of 737 students (See Figure 3). The possibility of multivariate outliers was examined using the Mahalanobis distance test. No multivariate outliers were identified. A series of frequency histograms (See Figures 4 and 5) were calculated. Given the sample size ($N = 737$), the general robust nature of analysis of variance to departures from normality (Warner, 2013), and the results of the frequency histograms, the assumption of normality was adequately met.

Figure 1

Boxplots to Identify Outliers – Round 1

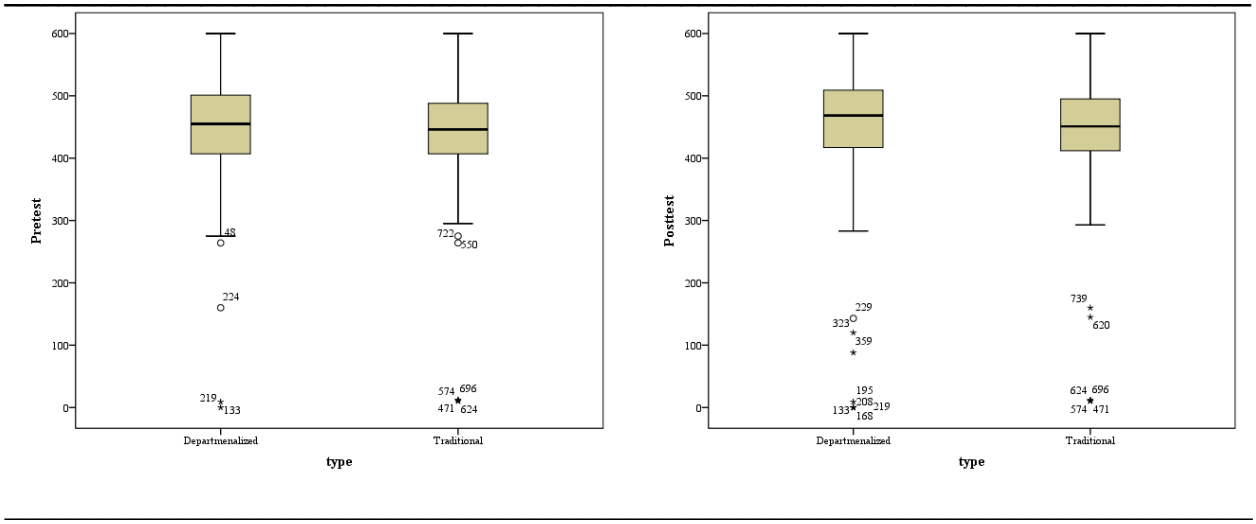


Figure 2

Boxplots to Identify Outliers – Round 2

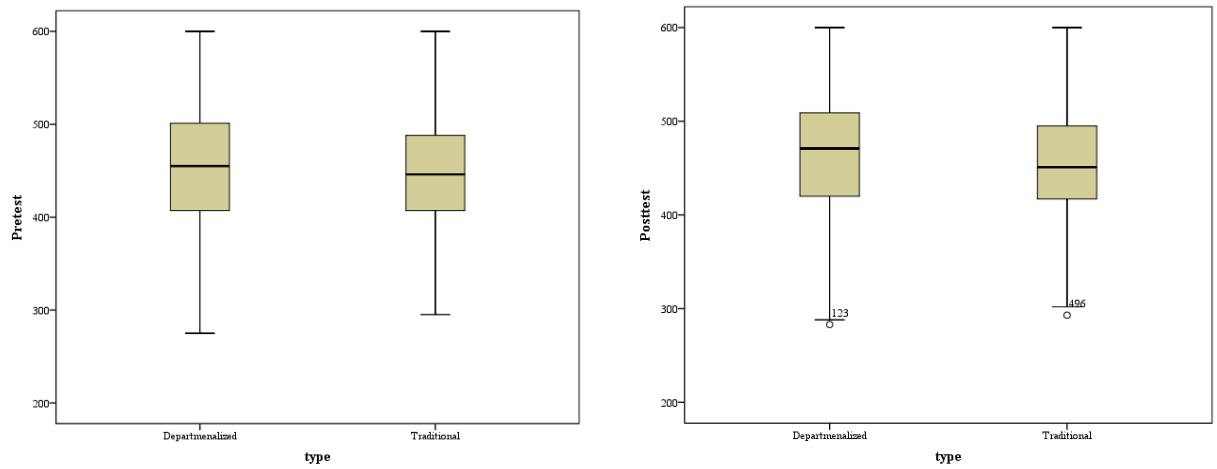


Figure 3

Boxplots to Identify Outliers – Round 3

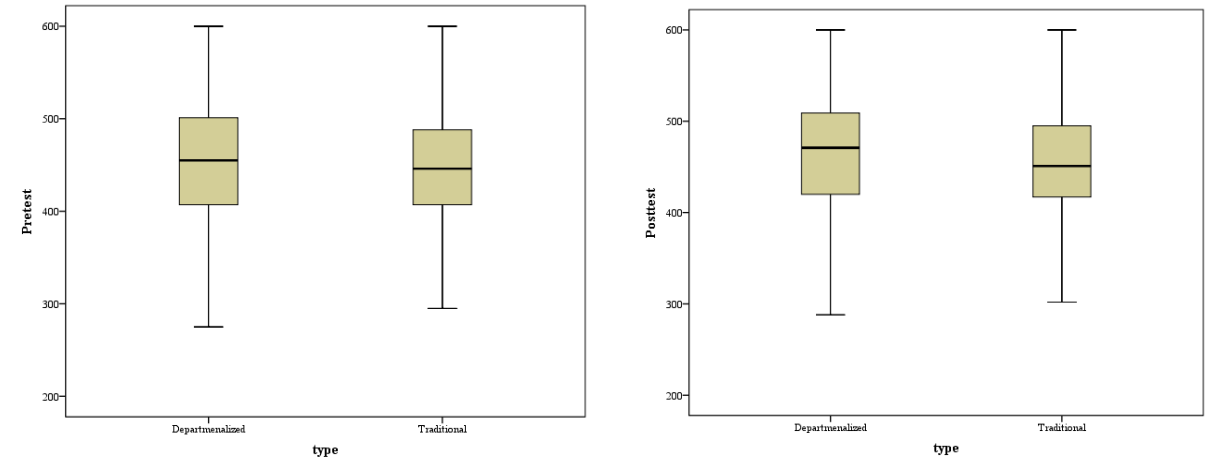


Figure 4

Pretest and Posttest Frequency Histograms for the Departmental Subgroup to Assess Normality

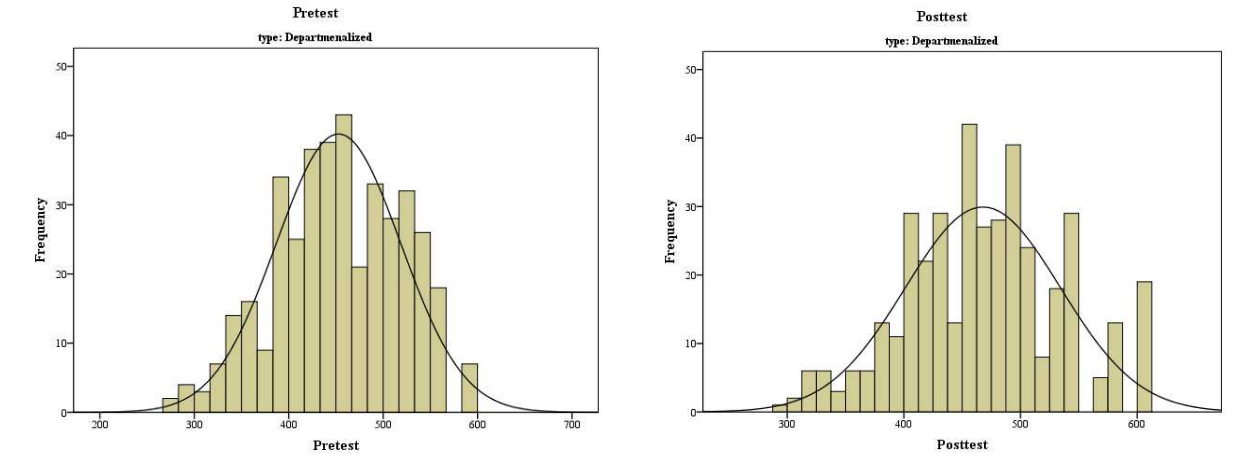
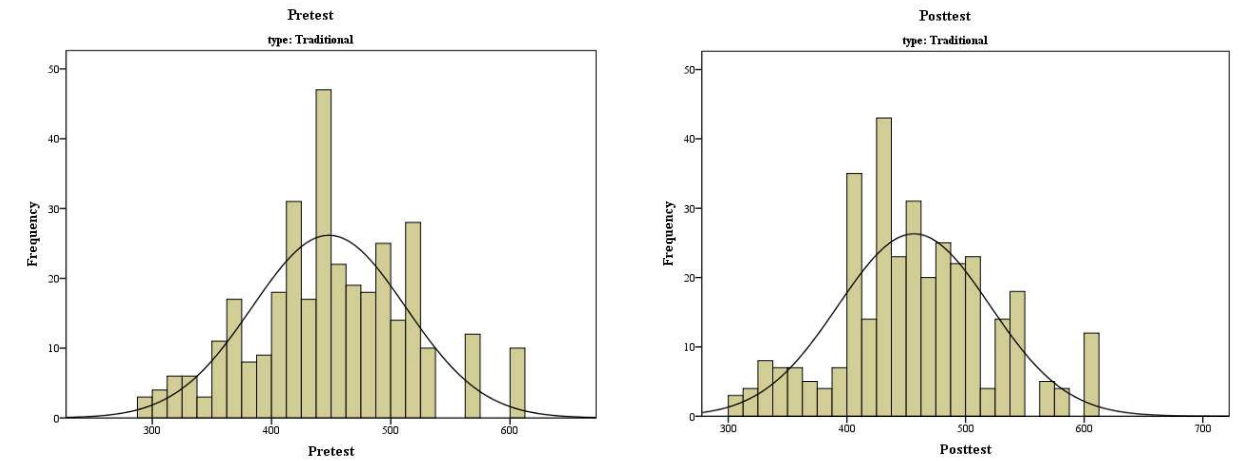


Figure 5

Pretest and Posttest Frequency Histograms for the Traditional Subgroup to Assess Normality

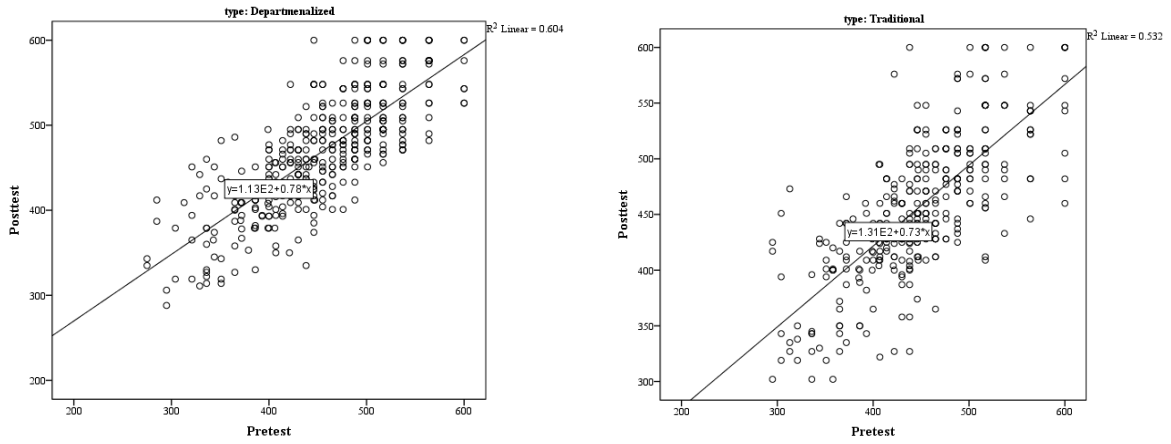


The assumptions of linearity and bivariate normal distributions were tested using both Pearson correlations and bivariate scatterplots (See Figure 6). Pearson correlations for pretest with posttest were as follows: Departmentalized subgroup ($r = .78$, $p = .001$) and Traditional

subgroup (r = .73, p = .001). Inspection of Figure 6 found the arrangement of the data points in both scatterplots to resemble the classic "cigar shape" of the bivariate normal distribution (Gall, Gall, & Borg, 2007; Warner, 2013).

Figure 6

Scatterplots to Assess Bivariate Normality and Linearity by Subgroup



Note. Pearson correlations for pretest with posttest: Departmentalized subgroup (r = .78, p = .001) and Traditional subgroup (r = .73, p = .001).

The assumption of homogeneity of slope was examined in Table 4. The interaction effect for type of instruction with the pretest score was not significant, F (1, 733) = 1.39, p = .24, suggesting that this assumption was met.

Table 4

One Way ANCOVA for Posttest Reading Based on Type of Instruction Controlling for Pretest Reading Score. Interaction Effect Included (N = 737)

Source	*SS*	*df*	*MS*	*F*	*p*	Partial Eta Squared
Full Model	1,820,969.03	3	606,989.68	330.61	.001	.575
Type of Instruction	1,237.31	1	1,237.31	0.67	.41	.001
Pretest	1,760,798.74	1	1,760,798.74	959.07	.001	.567
Type X Pretest	2,548.71	1	2,548.71	1.39	.24	.002
Error	1,345,747.36	733	1,835.94			
Total	3,166,716.39	736				

Note. Levene's Test of Equality of Error Variances: F (1, 735) = 0.02, p = .89.

The final assumption (equal variances) was tested two ways using Levene's test of equality of error variances. First, as a preliminary analysis, one-way ANOVA tests were used to compare the type of instruction with the student's pretest score, posttest score, and their gain score (posttest score minus pretest score) (See Table 5). For all Levene's tests, non-significant results were noted. Taken together, the five statistical assumptions for analysis of covariance were adequately met.

Table 5

One-Way ANOVA Comparisons for the Two Types of Instruction (N = 737)

Score	Type of Instruction	*n*	*M*	*SD*	Levene's Test				
					F	*p*	η	*F*	*p*
Pretest					1.11	.29	.04	0.92	.34
	Departmentalized	399	452.73	65.96					
	Traditional	338	448.10	64.39					
Posttest					0.75	.39	.09	5.34	.02
	Departmentalized	399	467.74	66.50					
	Traditional	338	456.59	64.08					
Difference [a]					0.08	.77	.07	3.72	.05
	Departmentalized	399	15.01	44.25					
	Traditional	338	8.49	47.27					

[a] Difference Score = Posttest minus pretest.
Note. Levene's test measured the equality of variances.

Null Hypothesis One

The null hypothesis for this study predicted that, **$H_0$1:** There is no significant difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores.

To test this hypothesis, an ANCOVA model was conducted to determine the difference between posttest reading scores based on instructional setting controlling for pretest reading scores (see Table 5). Departmentalized students had significantly higher posttest reading scores F (1, 734) = 5.34, p = .02. However, it should be noted that the effect size for the posttest score (η = .008) was considered to be weak when interpreted in terms of the eta squared statistic (Gall, et al., 2007; Warner, 2013). The between subjects effect for instructional setting was significant

F(1, 734) = 5.82, p = .02, partial eta squared = .008 Although the difference is significant, the effect size is considered to be weak when interpreted in light of a .05 level of significance and statistical power of .5 (Gall, et al., 2007; Warner, 2013). This finding failed to reject the null hypothesis (See Table 6).

Table 6

One Way ANCOVA for Posttest Reading Based on Type of Instruction Controlling for Pretest Reading Score. No Interaction Effect Included (N = 737)

Source	*SS*	*df*	*MS*	*F*	*p*	Partial Eta Squared
Full Model	1,818,420.31	2	909,210.16	494.97	.001	.574
Pretest	1,795,635.86	1	1,795,635.86	977.53	.001	.571
Type of Instruction [a]	10,695.95	1	10,695.95	5.82	.02	.008
Error	1,348,296.08	734	1,836.92			
Total	3,166,716.39	736				

Note. Levene's Test of Equality of Error Variances: F (1, 735) = 0.02, p = .90.
[a] Type: Departmentalized (M = 466.14, SE = 2.15) versus Traditional (M = 458.49, SE = 2.33).

CHAPTER FIVE: CONCLUSIONS

Overview

In this chapter, the results of this study in comparison to the literature was discussed. The significance of this study was contextually addressed from the detailed information in this chapter. The implications and limitations of this study was addressed, along with a series of recommendations for future research.

Discussion

The purpose of this quantitative causal-comparative study was to examine the relationship between classroom instructional setting, departmentalized or traditional, and academic achievement in reading for fifth grade students, while controlling for prior achievement in fourth grade. This study investigated one research question: Is there a difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores?

The question investigated two types of instructional settings, and the potential influence these settings can have on the reading achievement of fifth grade students. The null hypothesis stated that there is no significant difference between the Standards of Learning reading achievement scores of fifth grade students who are taught in a departmentalized instructional setting compared to those who were taught in a traditional instructional setting while controlling for students' preexisting Standards of Learning reading achievement scores. The results of the ANCOVA displayed in Table 6 for fifth grade reading scores, while controlling for fourth grade scores, showed no significant difference $F = (1,735) = .02$, $p = .90$, $\eta_p^2 = .001$, . According to

Gall, Gall, and Borg (2007) and Warner (2013), if $p < .05$ there is a significant difference in data which rejects the null hypothesis. Therefore, the null hypothesis in this study was retained.

The results of this study align with Skelton (2015), Mitchell (2013), and Yearwood (2011) who found no significant difference between instructional setting and reading achievement scores. The results of this study concluded that students exposed to departmentalized instruction scored higher on the standardized assessment, however the type of instructional setting had less than 1% exploring power as represented in Table 6. Similarly, Yearwood (2011) found that students exposed to departmentalized reading instruction scored slightly higher on the reading standardized assessment, yet the null hypothesis was rejected due to insufficient evidence that the instructional setting was the cause of the small increase in scores.

Yearwood's (2011) study also focused on Vygotsky's (1978) social-cultural learning theory which encourages peer-teacher interaction and relationships and cognition. Vega and Hederich (2015) found that giving students opportunities to work together promotes social skills and increases students' cognitive development. When students collaborate to form a common achievable goal for all students and work together to accomplish the goal, the students and teacher have created a positive cooperative learning environment (Asakawa, Kanamaru, Plaza, & Shiramizu, 2016; Dean, Hubbell, Pitler, & Stone, 2012; Johnson, Johnson, & Smith, 2014; Vega & Hederich, 2015). A social-cultural and cooperative learning environment is well planned and enabled by a knowledgeable teacher who facilitates and provides guidance and instruction to attain the greatest academic impact for all students (Vega & Hederich, 2015; Yearwood, 2011).

In contrast, Skelton (2015) and Mitchell's (2013) data favored traditional instructional settings. Skelton (2015) found that students exposed only to traditional instruction scored 3.82

points higher on the standardized assessment and Mitchell's (2013) participants scored 6.19 points higher on the standardized assessment. One possible explanation for the difference in Mitchell's results is the statistical result of the accompanying teacher questionnaire which found that most teachers in the study favored traditional instruction over departmentalized instruction. Jacob and Rockoff (2011) expressed that structural changes will require teacher "*buy in*" to be efficient, which Mitchell's (2013) study did not seem to have.

Although the statistical analysis of this study was unable to reject the null hypothesis, the slight point increase for students in the departmentalized setting allowed the researcher to support Vygotsky's (1978) social-constructivist theory. Vygotsky's (1935) theory of sociocultural learning theory posits that students learn best through social experiences with their peers. In 1978, Vygotsky combined his learning theory with Piaget's (1954) constructivist theory which deemed students learn best from social interactions and the use of their background knowledge. The social-constructivist theory merges to syndicate peer interaction and learning through schema and environmental situations. Therefore, the results of this study coincide with the social-constructivist theory. While one could conclude, based on the given research, that a departmentalized setting offers more cooperative and social learning opportunities, it may be equally reasonable to draw the converse conclusion as this study provided less than 1% exploring power.

Implications

The results of this study added to the existing body of knowledge in regard to the effect of classroom instructional setting departmentalized and traditional, on student's reading achievement scores. Studies by Skelton (2015), Mitchell (2013), and Yearwood (2011) presented contradictory results concerning which instructional setting could be most beneficial to students'

academic success even though the researchers found no significant difference between groups. With few studies available that address the gap in reading achievement, the results from this study allowed the researcher to contribute more information to the debate. Data analysis shows that there is a little more academic progress for student's in the departmentalized setting (Yearwood, 2011) as opposed to those in the traditional setting (Mitchell, 2013; Skelton, 2015).

Efforts to close the achievement gap are on-going and one strategy to boost test scores and overall achievement is restructuring schools (Gewertz, 2014; Skelton, 2015). This study and Yearwood's (2011) study align with the growth seen in the Florida schools after an administrator tried departmentalizing in 2001 (Nelson, 2014), however the minuscule point increase may not be enough to debate classroom reform. Other factors such as socio-economic status or the number of students with disabilities tested will need to be explored for deeper statistical analysis. Giving upper elementary classes a middle and high school arrangement, can possibly raise scores as well as boost teacher confidence and moral as teachers become specialist in the subject area(s) taught, but further study is needed (Jacob & Rockoff, 2011; Johnson, 2013; Nelson, 2014).

In addition to the statistical results, it was shown that students in suburban areas may benefit from structural changes. Mitchell's (2013) study consisted of a population of urban schools and the results favored the traditional setting for students. Skelton's (2015) study consisted of all schools in the Mississippi area and the results favored the traditional setting. Yearwood's (2011) study consisted of a population of rural schools in Georgia. Although Yearwood's (2011) study found no significant difference in reading achievement, the results of the study favored the departmentalized setting. The population in this study consisted of a suburban population of students in Virginia. There was no significant difference in reading achievement, but the results favored the departmentalized setting.

Although these studies show no significant difference, school district officials and administrators can use the data to determine if the structural change in instructional setting will benefit certain groups or schools in the district. Along with teacher "*buy in"*, and the quantitative evidence of statistical data analysis in this study, departmentalization at the elementary level remains a long-debated discussion still worthy of consideration in this era. As teachers continuously strive to close the achievement gap in literacy, current research that focuses on the departmentalized teacher as a content specialist and the slight increase in the average scores of departmentalized students in this study, provides information for school leaders to consider. With high-stakes testing and accountability being a factor at the forefront of the educational system, reducing the number of core subjects upper elementary school teachers must commit to, may reduce some of the pressure of achieving goals to meet state requirements for testing, and implies that this change may give teachers the opportunity to focus on improving student achievement while the educator grows in the knowledge of assigned subject area(s) (Jacob & Rockoff, 2011; Johnson, 2013; Nelson, 2014).

Limitations

The researcher was unable to oversee the implementation of instruction to all participating schools and observe student readiness for fifth grade instruction, therefore creating a threat to internal validity. To minimize this threat, the researcher used the students' 2015 Fourth Grade Reading test scores as a covariate to control for previous academic achievement for the analysis of the ANCOVA. All participants completed the fourth-grade standardized test and were taught in a traditional setting for fourth-grade instruction.

The use of the Virginia Standards of Learning assessment has the potential to affect internal validity. The researcher was unable to participate in or observe the development of test

items for the reading SOL. All testing items were created by the Virginia Department of Education and teachers from the state. These test items remained confidential until the test was administered. The test was also created with two versions, Core 1 and Core 2, but the same core standards were covered to ensure equitable distribution of difficulty (Gall et al., 2007; VDOE, 2012c). The process used to secure the validity and reliability of this instrument significantly minimized the threat.

This study was conducted using pre-existing data for departmentalized and traditional instructional settings. The participating students at each school were already placed by administrators or teachers, therefore proposing a threat to internal validity. This convenience sample was not randomly selected, however the researcher implemented a matching procedure (Gall et al., 2007) to minimize the threat by creating a control group of Non-title I regular education fifth grade students as the traditional group, and a group of Non-title I regular education fifth grade students as the departmentalized group. Because only one grade level for one area in a large school district was used for this study, the results cannot be generalized (Gall et al., 2007).

Internal validity and reliability procedures were consistent with previous research focused on the reading achievement of students in departmentalized and traditional instructional settings. All procedures were followed for analysis of data and the instrument was considered valid and reliable to measure students' academic scores. Regardless of potential limitations, this study served its intended purpose of adding to the body of knowledge related to structural changes in the elementary school.

In Mitchell's (2013) study, the researcher presented a questionnaire to teachers focusing on their perception of the type of instructional setting that would best benefit students. For this

study, the researcher did not have access to teachers associated with the departmentalized and traditional groups. Information about the teachers' background, presented in the form of a questionnaire, would have been beneficial to this study as it could have added more insight as to why one groups average score was higher than the other. Information such as years of experience, reading endorsements, or other types of certification could have further contributed to the knowledge base regarding the results of this study.

Recommendations for Future Research

After careful analysis of this study, the researcher affirms that there are several areas that could be pursued to further enhance the long-debated topic of instructional settings. To advance the body of research regarding the effect of classroom instructional setting on academic achievement, the researcher highly recommends the following:

1. Extend the research using subgroups, such as gender and racial minority/non-minority status.
2. Consider collecting data from Title I and high ESOL populations.
3. Focus on special education groups, including those who take alternative tests such as VAAP. These students receive daily classroom instruction and instructional services.
4. Consider a longitudinal study. Include at least three or four years of data to investigate outcomes over several groups of students, or for the same group of students.
5. Consider choosing a different subject area such as math or science, or investigating several subject areas.
6. Consider analyzing fifth grade traditional scores to sixth grade departmentalized scores to investigate the difference in scores from one year to the next. Most middle school

institutions begin at the sixth-grade level, unless a specific school has opted out of departmentalization.

7. Consider adding a teacher questionnaire to gain teacher perspective on departmentalized and traditional instruction. Consider a student questionnaire and their perception of the instruction they receive. The student questionnaire can be given to departmentalized students. These students can discuss the method of teaching preferred.

Further analysis from the afore mentioned recommendations may provide valuable insight for educators regarding the most effective instructional setting to promote higher student achievement.

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APPENDIX A. County Accountability Office Review Board Approval Letter

[redacted] County
PUBLIC SCHOOLS
[redacted]

August 16, 2017

Shakera Chennis
[redacted]

Dear Ms. Chennis,

The purpose of this letter is to let you know that your request to conduct research in [redacted] titled "*The Impact of Traditional and Departmentalized Classroom Instructional Settings on Fifth Grade Students' Reading Achievement*" has been reviewed by [redacted] leadership.

Your request has been **approved** for the following reasons. Please ensure that all identifying information has been removed in the final reporting of the study. Upon approval from Liberty University's review board, please contact me and we will fulfill the data request. Thank you for your interest in PWCS as a research site, and we wish you success with your study.

Sincerely,

[redacted] Ph.D., NBCT
Supervisor of Program Evaluation

APPENDIX B. IRB Exemption

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

August 31, 2017

Shakera T. Chennis
IRB Exemption 2976.083117: The Impact of Traditional and Departmentalized Classroom Instructional Settings on Fifth Grade Students' Reading Achievement

Dear Shakera T. Chennis,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(4), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

> (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at..
.

Sincerely,

LIBERTY
UNIVERSITY.

Liberty University | Training Champions for Christ since 1971

APPENDIX C. Traditional or Departmentalized Spreadsheet

Elementary School	Departmentalized in 5th grade?
A.	No
B.	No
C.	Yes
D.	No
E.	No
F.	Yes
G.	No
H.	No
I.	Yes (all but one – odd #)
J.	Yes (departmentalize, but not team?)
K.	No
L.	No
M.	No
N.	No
O.	No
P.	No
Q.	Yes
R.	Yes
S.	No
T.	No
U.	No
V.	No
W.	Yes
X.	No
Y.	Yes
Z.	No
AA.	No
BB.	No
CC.	Yes
DD.	No
EE.	No
FF.	Yes
GG.	No
HH.	No
II.	Yes
JJ.	No
KK.	No
LL.	No
MM.	Yes
NN.	No

OO.	Yes
PP.	No
QQ.	Yes
RR.	No
SS.	Yes
TT.	No
UU.	Half do, half don't
VV.	Yes
WW.	Half do, half don't
XX.	Yes
YY.	No
ZZ.	Yes
AAA.	No
BBB.	Yes
CCC.	No
DDD.	No
EEE.	No
FFF.	Teamed 4-5 pairs
GGG.	No
HHH.	No
III.	No