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# Self-contained and Departmental Educational Delivery Systems: A Case Study of Differences in Student Achievement and Behavior

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# SELF-CONTAINED AND DEPARTMENTAL EDUCATIONAL DELIVERY SYSTEMS: A CASE STUDY OF DIFFERENCES IN STUDENT ACHIEVEMENT AND BEHAVIOR

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Approved by
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## APPROVAL OF THESIS

We, the faculty supervising the work of Robert Eugene Smith III, affirm that the dissertation, *Self-contained and Departmental Educational Delivery Systems: A Case Study of Differences in Student Achievement and Behavior*, meets the high academic standards for original scholarship and creative work established by the EdD Program in Leadership Studies and the College of Education and Professional Development. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.

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ago, I began work in what I thought was an obscure ethics class, but it was during this period of instruction and reflection that I came to terms with a lot of demons. For the first time since the War in Iraq, I truly reflected on my action. I truly gave attention to what is important and what makes us who we are. Although, the purpose of the class may not have been to provide closure, therapy, or acceptance, it did for me, and I am a better person for it. So, from the bottom of my heart thank you Dr. Bobbi Nicholson.

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## ABSTRACT

This study investigated the differences in achievement and behavior for fifth-grade students taught using a self-contained instructional model compared to students taught using a departmentalized model. Differences based on selected demographic/attribute variables were also investigated. Teacher perceptions regarding the differences in the two organizational models were also examined. Data were collected from the West Virginia Department of Education's end of the year student academic achievement assessment (The West Virginia General Summative Assessment), the West Virginia Department of Education's online information system (WVEIS), and teacher surveys. Data suggest differences in the two instructional models along with significant differences in male and female achievement. Student behavior and teacher perceptions also varied between the two instructional models. For school and district leaders to make informed decisions about departmentalizing elementary grades adjacent to the middle level, it is crucial to consider many factors and avoid potential pitfalls associated with curriculum redesign and instructional realignment.

# CHAPTER 1

## INTRODUCTION

Across the United States and the world, the ways in which we do business, communicate, collaborate, and associate have changed and continue to change, often at a blinding pace. What has not changed, to a great extent, are the ways in which our youth are being educated. Throughout the nation, it is common to find elementary students receiving instruction from one teacher most of the day, and that one teacher is responsible for all core content (i.e., mathematics, English language arts, science, and social studies). Morton and Dalton (2007) observed students in elementary grades have been spending a disproportionate amount of time receiving English language arts instruction compared to other core content (i.e., mathematics, social studies, and science) in the self-contained setting. Meanwhile, the United States' overall academic performance remains lukewarm when compared to other nations (Desilver, 2017).

If the United States is to remain competitive on the world stage, we must reevaluate the ways in which we educate our youth and prepare them for the future. The role and burden of the American elementary teacher is tremendous, and it is important not to lose sight of these responsibilities. Not only are teachers tasked with the cognitive development of our youth, they are also entrusted with our youth's social and emotional development as well.

The ways in which we educate our elementary age children may be attributable to a holdover from the one-roomed schoolhouses found in our nation's past, to the availability of educators, and/or to available funding. When students are schooled in a self-contained environment, their exposure to others is limited to one classroom for most of the day, one adult personality, and one collective student body. Now, consider the ways in which we educate and

prepare students after elementary school. From secondary school to the workforce to the military, experts in specific fields are training and educating for a specific purpose.

There is a need to gain a better understanding of the extent to which other strategies can be adapted for rural fifth-grade students in an attempt to increase student performance. It is unacceptable to expect our youth to have a working knowledge of mathematics, reading, and science if we are exposing them to teachers who have only a general knowledge of all content, and not specific subject-matter content knowledge (Gojak, 2013).

Proponents of the traditional elementary setting continue to argue elementary age children benefit when one educator is working to meet their social, emotional, and cognitive needs; however, the societal reality does not often reflect the idea that children are exposed to a limited number of adults in their lives (Gojak, 2013). The realities of the modern working family, single parents, and other non-traditional families expose children to a plethora of adult caregivers, mentors, and influencers. To suggest students benefit most when their ability to build relationships and learn from different personalities is limited to one adult in the traditional elementary model may be, at best, misguided. A departmentalized educational model may more accurately reflect the context of the modern family.

The commitment we have made to educate our youth is admirable, and we make an effort to educate all those among us – regardless of abilities. For the purpose of this study, the focus will be on the manner in which we organize our students for instruction, and the potential to increase student achievement by rethinking schooling and our approach to educating the whole child (i.e., social, emotional, and cognitive development).

There is no one-size-fits-all approach to implementing academic achievement, but there may be common strategies and approaches that can be incorporated to develop the most effective

approach to improving student learning. States across the nation have unique challenges, and it is important to understand these challenges and work to better understand interventions and steps being taken to improve educational achievement.

Given West Virginia consistently ranks near the bottom in most educational rankings, it is crucial to understand our instructional models, the interventions attempted, and the successes or failures associated with them. West Virginia's poor academic performance may be a byproduct of rural poverty and other socio-economic conditions, but the goal of the education system is to break these cycles and provide a better quality of life through education. Nationally, nearly 50% of the school age children live in poverty, and West Virginia consistently ranks among the lowest performing states (Stebbins & Frohlich 2018).

Payne (2005) argues those caught in a cycle of poverty do not have the appropriate tools, social constructs, or cognitive ability to accept and learn new concepts – regardless of how well the content is taught. The current model of schooling, however, does little to address the causes of poor cognitive ability, and instead attempts to treat the symptoms. Payne (2005) also asserts the need to equip students with the tools needed to build learning structures within themselves. Many students living in poverty will come to school without the ability to reason at the same level as those from a middle-class setting. Students who cannot plan and predict will not be able to learn and think as critically as their middle-class peers.

The adverse effects of poverty cut much deeper than the superficial appearance between the haves and have-nots. Poverty can cause biological roadblocks to learning, reasoning, and verbal communication (Jensen, 2009; Johnston, 2019; Payne, 2005). Meanwhile, little traction can be found at the federal level to address educational problems related to poverty at the local level. Instead, the federal government has opted to address education on the macro-level and

support public education in only terms of generality (Johnston, 2019). In addition to the negative baggage students from poverty bring with them to school, they are also subject to learning environments that are ill-equipped to meet their unique needs. Many of these students are unaware of the world outside their often drug-ridden and violent homes, and the schools are not prepared to expose students to a world outside the one in which they live (Johnston, 2019; Taylor, 2017).

Secondary schools are charged with preparing students to be college or career ready, but the journey for success begins at a much younger age. Parents from middle-class homes often have the resources, time, and ability to prepare their children for life after schooling; however, those living in poverty are often excluded from the benefits available to middle class students. Taylor (2017) argues relevant and meaningful interventions must start long before secondary school. Many of the programs and opportunities related to success as an adult are offered late in high school – long after the cancerous effects of poverty have taken their toll on the student. Taylor (2017) suggests confronting the problems associated with poverty and education early is key to breaking the cycle of poverty, and providing students with opportunities later in life.

If research supports the notion students benefit from early interventions and attempts to break poverty's strangle-hold, it may be prudent to explore and discuss the types of instructional delivery systems which we employ. The traditional self-contained educational delivery system limits exposure students have to different professionals, different personalities, and different experiences. In addition, the traditional self-continued educational delivery system does not allow for scheduling that provides needed interventions from professionals who are equipped to meet the social, emotional, and cognitive needs of learners living in poverty.

## Problem Statement

Historically, elementary education has relied primarily on a self-contained organizational model for instructional delivery; however, other models, including departmentalization, have been evaluated. Students will sometimes perform better academically in a departmental setting while measures of school culture are higher in a self-contained setting; however, student discipline incidents appear to lessen in a self-contained setting (Hood, 2010; Lounsbury, 1988; Taylor-Buckner, 2014; Williams, 2009; Yearwood, 2011). There is an insufficient amount of research focusing on the use of departmentalization at the elementary level, particularly in those grades adjacent to the middle school grades. Concurrently, state test scores in ELA and mathematics were below expectations in the case study school. Therefore, this study investigated the differences in achievement and behavior for fifth-grade students taught using a self-contained instructional model compared to students taught using a departmentalized model. Differences based on selected demographic/attribute variables were also investigated. Teacher perceptions regarding the differences in the two organizational models were also examined.

## Research Questions

The following specific questions guided the study:

1. What are the differences, if any, in fifth-grade students' mathematics achievement in self-contained versus departmentalized instructional delivery systems?
2. What are the differences, if any, in fifth-grade students' English language arts achievement in self-contained versus departmentalized instructional delivery systems?
3. What are the differences, if any, based on selected fifth-grade students' demographic/attribute variables, in mathematics achievement in self-contained versus departmental instructional delivery systems?

4. What are the differences, if any, based on selected fifth-grade students' demographic/attribute variables, in English language arts achievement in self-contained versus departmentalized instructional delivery systems?
5. What are the differences, if any, in students' behavioral incidents requiring administrative interventions in self-contained versus departmentalized instructional delivery system?
6. What are the differences, if any, based on selected fifth-grade students' demographic/attribute variables, in student behavioral incidents requiring administrative interventions in self-contained versus departmentalized instructional delivery systems?
7. What are the fifth-grade teachers' perceptions regarding teaching in a self-contained versus departmentalized instructional delivery system?

## Operational Definitions

The following definitions were developed for use in this study:

**Instructional Delivery System** – The systems by which instruction is provided consisting of departmentalized setting in which students receive their core content (i.e., English language arts, mathematics, social studies and science) instruction from one teacher per subject; or a self-contained setting in which students receive their core content (i.e., English language arts, mathematics, social studies and science) from the same teacher throughout the school day and school year, but may receive related arts content from a different teacher (i.e., art, music, and foreign language)

**Special Education Services** – Services provided to students who have been identified as having a disability that could affect their ability to learn in a general educational setting.

**Sex** – The sex of the student as reported on their official enrollment file.

**Ethnicity** – The ethnicity as reported on the students' official enrollment. For the purpose of this study ethnicity will be divided into two categories, White and non-White.

**English Language Arts (ELA) Scale Score** – The calculated score reflecting a students' overall ELA proficiency on the West Virginia General Summative Assessment. The calculation is derived from the Lexile score, reading literary text, reading informational text and writing and language.

**ELA Reported Lexile® Measure –** A score from The West Virginia General Summative Assessment used by the West Virginia Department of Education to measure a student's reading level.

**Reading Literary Text Reporting Category Scale Score** – A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to read literary text.

**Reading Informational Text Reporting Category Scale Score** – A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to read informational text.

**Writing and Language Reporting Category Scale Score -** A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability in writing and language.

**Mathematics Scale Score -** The calculated score from The West Virginia General Summative Assessment to assess the student's overall mathematics proficiency.

**Mathematics Reported Quantile® Measure –** A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability in mathematics.

**Operations and Algebraic Thinking Reporting Category Scale Score -** A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand operations and algebraic thinking.

**Number and Operations in Base Ten & Fractions Reporting Category Scale Score -** A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand numbers and operations in base ten and fractions.

**Measurement, Data and Geometry Reporting Category Scale Score -** A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand measurement, data, and geometry.

**Modeling and Problem Solving Reporting Category Scale Score -** A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand modeling and problem solving.

**Use Mathematical Reasoning Reporting Category Scale Score -** A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to use mathematical reasoning.

**Discipline I –** Minor disciplinary infractions most commonly related to classroom disruptions and immature behavior as reported in the West Virginia Department of Education's Student Information System.

**Discipline II –** Minor to moderate disciplinary infractions that most commonly relate to classroom disruptions, hallway disruptions, and physical altercation as reported in the West Virginia Department of Education's Student Information System.

**Discipline III –** Moderate to severe disciplinary infractions that most closely relate to safe school violations, drug activity, violent acts, and minor weapons as reported in the West Virginia Department of Education's Student Information System.

**Discipline IV –** Acts committed that violate statutes of law as reported in the West Virginia Department of Education's Student Information System.

## Significance of Study

This study has the potential to help educators better understand the potential effects of the ways in which we organize our youth for instruction in the upper elementary and middle school grades. In the future, other working educators could use this study to develop a customized educational model that best fits a class, a school, or a district. Future researchers will have the opportunities to build on the proposed study's strengths and weaknesses. Study findings could also be used as a guide to implement selected strategies in different educational settings.

This study may have the greatest potential for use by other practicing local or district school administrators. Local educators are required to constantly evaluate their trade, their philosophy, and their methods if they wish to stay current with the learners and the ways in which they process information. Studies such as this one could provide educators with various studies and data to inform their decisions. Thinking outside the box and stepping outside comfort zones will allow growth and improvement in teaching and learning. The findings from this study may also allow the working educator to make decisions that can facilitate change from within instead of waiting for or depending on external agencies to drive improvement.

## Delimitations

Two delimitations exist within the parameters of this study. The student population was limited to two classes of fifth grade students at a single middle school. The teacher population was limited to the six teachers of these two classes of fifth grade students. The generalizability of study findings may be reduced because of these delimitations.

# CHAPTER 2

# LITERATURE REVIEW

Chapter two contains the background of related literature that provides the foundations for this study. This review of literature is organized into sections on historical beginnings, departmentalization and student achievement, organizational leadership, and social and emotional concerns. A brief summary of the literature review is provided in a final section.

## Historical Beginnings

The story of the American educational system began long before the evolution of the one-room school house; however, by the time of Jefferson the American educational system as we know it was in its infancy (Ray, 2017). Leading up to the Revolutionary and Jeffersonian eras, many local towns, counties and municipalities attempted to create laws that made schooling a requirement under the penalty of law, but little effort was made to enforce the laws and policies (Ray, 2017). After the Revolutionary War, and as cities grew and rural agriculture kept pace with the growth, the need for schools and a basically educated populace expanded. Leading up to the Civil War, the one-room school was common, and the building was staffed with one teacher who was responsible for educating all students under her charge (Zimmerman, 2014).

During that same period, a Boston principal developed a plan that organized students into grade levels at the elementary level, but fell short of creating educational departments staffed by individual teachers (Taylor-Buckner, 2014). Nevertheless, departmentalization did not fully gain traction until the early days of the 20$^{th}$ century, and then only in urban areas (Taylor-Buckner, 2014). After the Civil War, secondary education gained momentum, and much of the early model remains the framework for today's secondary schooling: students follow a schedule and see different teachers for different subjects (Taylor-Buckner, 2014).

Even though many urban secondary schools departmentalized throughout the 19th and 20th centuries, most elementary schools remained self-contained, and even one-roomed through the 1950s (Ray, 2017). Beginning in the 1930s and through the 1940s, the discussion about self-containment versus departmentalization became a tug-of-war, with self-containment emerging as the more prominent approach for primary schooling. Self-contained instruction at the elementary level remained dominate until the Soviet Union became a threat and education became a matter of national security in the late 1950s (Taylor-Buckner, 2014).

During the 1960s, scholars and governmental agencies began to take an interest in the approaches to schooling being utilized across America. In 1965, the American Association of School Administrators (AASA) began to investigate educational settings, student grouping, and allowed grade level movement. Public schooling was beginning to be viewed as much more than academics, and it was asserted that socialization and emotional development are the "gateway to academics" (Chan, Terry & Bessette, 2009). In many cases, local elementary schools work closely with their secondary schools to ensure a transition with as little friction as possible. The focus may be on social and emotional transitions, and not academic achievement; however, many in the elementary setting argue self-containment offers more time for instruction (Chan, et al., 2009). Others argue that the continuation of the self-contained settings has more to do with traditional practices and fiscal management than student achievement (Gojak, 2013).

As the federal government continues to take a more active role in funding education, the lines of authority and federalism continue to blur. The business of public education is no longer just a local/state issue. With federal programs such as No Child Left Behind, Race to the Top, and the reauthorization of the Elementary and Secondary Acts as the Every Student Succeeds Act, and the continuation of high stakes testing requirements, we will no doubt continue to

discuss the merits of departmentalization, educational standards, and nurturing (Taylor-Buckner, 2014).

**Departmentalization and Student Achievement**

The idea of departmentalizing elementary grades is not new, and there has been much written about the subject. When attempting to study and understand educational departmentalization it is necessary to explore the extent to which it has been successful in different settings. Taylor-Buckner (2014) inquired about the effects of elementary departmentalization and student achievement in mathematics. This study found the strength the teacher possesses in math may be the determining factor in student mathematic performance, and the overall departmentalized situation may produce higher achievement due to a single teacher focusing on mathematics instruction; however, gains can be expected regardless of the educational setting if the teacher has a strong background in mathematics.

Taylor-Buckner's (2014) overall research question focused on whether elementary departmentalization will result in higher student achievement in mathematics. Taylor-Buckner also had several additional supporting questions centered on characteristics of the school, learner, and teacher. Much of the data were collected from preexisting data from government agencies. In addition, the researcher also chose three third-grade classes and three fifth-grade classes. Findings suggested student achievement in these grades may have more to do with the educators' ability in mathematics and less to do with the type of educational setting; however, it was also found teachers who are weaker in math are likely to provide better instruction in a departmental setting than a traditional setting. Overall, the results suggested a departmental setting may allow for more focused instruction, but the instructor still needs a high ability level in the subject taught.

Hood (2010) asserted while the traditional self-contained model allows teachers to be only generalists, self-contained delivery systems and generalists may still be productive and produce high student achievement levels. Hood (2010) argues that departmentalization causes isolation, a decrease in critical thinking, and less cross-curricular opportunities. Hood (2010) further reports the overall effectiveness of departmentalization on student achievement is still a matter of debate, but as student achievement standards increase so must the teachers' depth of knowledge and understanding of specific content.

Preparing teachers for the demands of providing specialized instruction is critical, as is teachers' confidence in teaching core content. Williams (2009) surveyed 180 teachers asking, "Do teachers believe their initial college training adequately prepared them to teach all core subjects at the fifth-grade level?" Williams discovered nearly half the teachers felt their college did not prepare them for providing fifth grade instruction (49.4%), while the other half felt college did prepare them for providing fifth grade instruction.

Williams's (2009) study ultimately found no significant difference in core (i.e., mathematics, English language arts, social studies, and science) achievement between students taught in self-contained settings when compared to those taught in a departmentalized setting. According to Williams (2009), the predominant focus identified in this study was to determine the best organizational structure—traditional or departmentalized — to produce the greatest improvement in fifth-grade general students' mathematics achievement scores as measured by the Georgia CRCT. Study findings suggest student achievement may rest on several factors, and a school's leadership would do well to consider many aspects of public education before making organization decisions.

Studies found many parents of students and students themselves in the later elementary grades (i.e., fourth and fifth) express excitement over the prospect of departmentalization (Chan, et al., 2009). Parent and student attitudes are only one side of the coin, however, and others have observed and documented the perceptions and attitudes of the teachers that made the change from a self-contained to a departmentalized setting. As early as the 1960s, students expressed excitement at the prospect of having multiple teachers throughout the school day, and had little trouble adjusting to change in educational settings (McDonald, 1958). A recent study found teachers reported several improvements to their teaching experience when transitioning to a departmental setting, including a lighter workload, broader teaching strategies, more frequent student interaction, longer planning, and more parental interactions (Gojak 2013; Strohl, Schmertzing & Schmertzing, n.d.).

Yearwood (2011) completed a comprehensive study that explored the effects of a departmental setting compared to a self-contained setting. The researcher asserted student achievement increases in departmentalized settings, but gave a word of caution when considering departmentalization in all settings. Yearwood found a departmental setting may reduce the responsibility of one teacher being responsible for all core content in this era of high stakes testing; however, Andrews (2006) cited a report in which mathematics and science ought to be taught by specialists beginning in the fifth grade. Long before the era of federal involvement and high-stakes testing researchers asserted it is difficult for one teacher to teach most, if not all, core content in a curriculum (McDonald, 1958).

Exposing elementary students to a departmental setting is only part of the equation, and to truly gain an understanding of its effect, the role of the teacher should also be explored. The educator's commitment and understanding will have an effect on student achievement. Minott

(2016) explored teachers' experiences with departmentalization and the extent to which it affected student achievement. Teachers who participated in the sample were chosen from an online database, and narrowed to a shortlist of 12. Minott used a combination of online discussions, questionnaires, and surveys to collect qualitative data. Findings suggested departmentalizing an entire school or grade level may not be the best option, and it may be prudent to start slowly and establish a pilot study group. The researcher also concluded teacher attitude and acceptance of change also have a lasting effect on student success and the success of any efforts to departmentalize. Findings from this study may be somewhat limited given the limited size and diversity of the sample.

When discussing departmentalization, some researchers point out not all teachers are equally competent in every content area. The states that require proficiency testing before issuing a teaching license cannot ensure every teacher likes a subject and wants to teach it with the same enthusiasm as subjects which she likes (Liu, 2011). Allowing teachers to teach a subject which they are passionate about may allow a narrowed focus, and a more in-depth approach to the learning standards. In short, teachers are able to specialize in an area and pass on that specialization to their students, have more time to plan a focus on a specific content, and provide differentiated instruction to meet the needs of unique learners. (Andrews 2006; Gojak 2013; Liu, 2011).

Public schooling requires attention not only to academics and content knowledge, but to a healthy social and emotional development as well. Teachers feel they have fewer disciplinary issues in self-contained classrooms, but also acknowledge students in the upper elementary and middle grades have problems sitting for long periods of time in the self-contained setting

(Lounsbury, 1988). Secondary educators are generally identified as content specialists at a much higher percentage than their elementary counterparts (Firestone & Herriott 1982).

There is not a one-size-fits-all approach to organization for instruction, and there are advantages and disadvantages to both departmental and self-contained settings. Teachers feel they are missing a more personal connection with the kids in a departmental setting, and the added stress on the students can cause poor social, emotional, and cognitive achievement (Liu, 2011). Other scholars agree there are no all-encompassing approaches to the educational experience. McPartland (1987) suggests while self-contained classes may sacrifice academic achievement, they may also build stronger social and emotional bonds; whereas, a departmental setting produces the opposite.

Other studies suggest upper elementary and lower middle grades (i.e., fifth and sixth) can reap the benefits of the type of setting in which they are situated. Lounsbury (1988) suggests if a fifth or sixth grade class is set in a traditional elementary setting (i.e., self-contained), students may interact with a single teacher, develop a closer relationship, and experience less stress. If, however, the fifth or sixth grade class is situated in a middle school setting, students may not experience the same amount of interaction, or develop a close relationship with their teachers, thus experiencing more stress. On the other hand, they may have more academic choices, be encouraged to explore options, have more learning tools and resources, and have in-depth exposure to specific content.

Nelson (2014) completed a study comparing math achievement among fifth grade students in departmental settings and self-contained settings. Using a quantitative design Nelson found a significant difference between the two educational settings. Study reflected an

improvement in mathematical achievement among students in a departmental setting when compared to those students in a self-contained setting.

Harris (1996) reported reading achievement levels in a departmental setting only increased among a small percentage of students, and remained static among the majority, but the control group (i.e., self-contained classroom) had higher student achievement assessment scores. Harris further asserted more time may be needed for study, and asking teachers and students to change abruptly could have a negative effect on student learning and teaching. Long before Harris' 1996 study, a California school district took specific action to address an identified reading deficiency among seventh and eighth graders. Stowe (1967) reported a California school district decided to provide reading instruction separate from English instruction in an attempt to raise reading proficiency among seventh and eighth graders. Stowe found that not only had reading scores improved, but so did the students' and parents' attitudes towards learning in a departmentalized setting.

The need to further explore educational settings and student success is self-evident. Schooling is an ongoing and ever-changing process and it is the responsibility of all educators to continually evaluate practices and approaches used to educate our youth.

**Organizational Leadership**

A departmental setting should not be assumed to be a one-size-fits-all approach to education. The manner in which these settings are established and the actions needed to make the transition from self-contained classrooms to a departmental setting must be understood from a leader's perspective.

Numerous comparisons have been made between organizational models in the elementary grades (i.e., self-contained) and middle grades (i.e., before high school and

departmentalized). Firestone & Herriott (1982) found that departmentalization can undermine the administrators influence, and may cause a decline in overall school climate. The size of the school, the comfort of the administrator related to specific content, and the individual needs of the learner are all key factors to be considered when making administration decisions about organizational structure. If teachers are experts in one specific content area, an administrator/instructional leader may need to consider the possibility of losing influence over specific content (Firestone & Herriott, 1982). As early as the 1950s McDonald (1958) argued that establishing educational settings is a school-based decision, and the leadership should consider their school's unique factors before instituting any change.

When making the change from a self-contained setting to a departmental setting the key to success may be strong leadership and the ability to facilitate a collaborative environment. Sydney (2011) suggests educators in the traditional elementary setting have strong feelings about individualism, and these feelings can become a sizeable obstacle in establishing a team or collaborative planning cycle. Simply moving from one type of educational setting to a different type is a complex endeavor, and the need for strong leadership is important. Sydney also argues moving to a departmental setting can cause a decrease in communication and collaborative efforts. Newly formed Professional Learning Communities (PLC) introduced to those familiar with the self-contained delivery systems can be a new concept, and it is the role of the leader to increase communication, familiarity, and comfort with change and the new concepts.

The recurring themes of strong leadership, communication, and collaboration appear to be at center stage. Yearwood (2011) suggests it may be wise for the administration to work with teachers when making a move from a self-contained setting to a departmentalized setting. Yearwood also recommended teachers should be carefully selected to take advantage of teacher

content expertise; the stronger teachers should be selected as content specialists. Teachers frequently feel their views and ideas are often overlooked when school-based decisions are being made (Williams, 2009).

Sydney (2011) explored the role of school-based leaders in a collaborative planning cycle in an elementary setting. Sydney identified several questions concerning educational collaboration and its effectiveness. These questions included the identification of the research required on how to overcome individualism and create a team environment. Sydney was also was interested in the ways in which teachers responded to the changes in their routines and in the master schedule, and the ways teachers responded to an increased amount of time spent with the administration. Using a qualitative design data were collected through a series of open-ended questionnaires designed to allow the respondents to identify their theories and understanding of the educational setting.

Sydney found departmentalization can cause a breakdown in the collaborative effort. He observed the educators were not collaborating on their prescribed curriculum, raising two questions: could this be a leadership issue, or is it instead a lack of understanding on the teachers' behalf? Perhaps collaboration and departmentalization could be new concepts to many at the elementary level? Sydney also found working in a collaborative environment increased familiarity, comfort, teamwork, and working in a team model may allow teachers to focus on the whole child and better meet students' social, emotional, and cognitive needs.
Sydney's recommendations included the idea that departmentalization causes a breakdown in a collaborative effort is more a scheduling issue than a product of change. For best results, scheduling a common planning time for the teachers to meet and discuss specific content may be required; moreover, allowing time for vertical teams to meet may allow for a better

understanding of student needs across different grade and ability levels. Finally, allowing time for team-building through well-structured professional development will create a team environment and increase the level of familiarity among the teaching staff.

For secondary teachers and administrators, the decision to departmentalize may appear to be a non-issue, and the teachers will quickly see the benefit, but for elementary teachers and administrators, the change can be more demanding and require a delicate approach. Many suggestions for easing such tensions have been offered. For example, Smith (2015) suggests homerooms be used to group students, and these groups travel together. Moreover, these students could be given the same seating assignment in each class.

Williams (2009) completed a study in which an inquiry was made regarding the extent to which teachers and the counselors are involved when the administration is planning changes in organizational structure. Williams used a mixed-methods approach to examine which may be the best organizational structure for the general education of fifth grade students. This study found a majority (62.2%) of teachers surveyed felt their voices and opinions were considered when fifth grade organizational decisions were being made. This study reinforced the importance of administration consideration of the opinions, wants, and needs of those tasked with carrying out the mission of education. Those bearing the weight of day-to-day operations may have insight and a fresh perspective, and their feedback may help in administrative decision making.

Others suggest a “middle ground” approach. For example, Liu (2011) suggests the content could still be departmentalized if the teachers could rotate instead of the students. Liu suggests another approach would be to team teach. Such approaches may allow the student to be

exposed to some transition, and some departmental aspects of education, but without an all-at-once change from self-containment to departmentalization.

Smith (2015) suggests no matter the route taken when departmentalizing, it is prudent to have a plan and increase communication with the teachers, stakeholders, and parents. One suggestion has been to establish a four-teacher model in a blocked instruction setting (i.e., blocked means set instructional minutes). Reed (2002) also reiterated how important it is to remember regardless of the approach, and regardless of the type of middle ground, it is wise to consider the educators' preconceived notions, attitudes, and experience in both departmentalized and self-contained learning environments.

Reed (2002) found prior knowledge and preconceived notions may have lasting implications on building a team model. Reed also outlined several recommendations for future research:

1. Further research is needed to explore what staff development opportunities are provided and available for teachers who teach in a block schedule.
2. Future research is needed to determine whether elementary school students are more successful academically when core subjects are departmentalized versus a model using partner teachers or self- contained arrangements.
3. Further research is needed to determine the impact of the teacher teams on the academic achievement of students in elementary schools.

The overall willingness to accept a change from a self-contained to a departmental approach may have the most positive effect on an educational program, and allowing/selecting a teacher to teach the subjects with which she is the most comfortable could lead to the most educational growth (Strohl, et al., n.d.). As pressure continues to grow from the state and federal

levels, leaders will need to think outside the box to improve student learning. Freiberg (2014) reminds us that the perception and attitudes of educators are important, but those of the students are as well. Perceptions, attitudes, and a willingness to change are important factors, but decisions must be based on what is best for the learner, and what is practical for the individual educational setting. (Lounsbury, 1988).

**Social and Emotional Concerns**

Developing a plan and having an understanding of the social, emotional, and cognitive development of students in the elementary and secondary grades is only part of a complex equation when discussing student learning and departmentalization. Those in academia have noted the attitude of the administrators and educators can play a major role in implementation of a departmentalized educational experience. As noted earlier, some educators feel with departmentalization they lose their social and emotional connections with students and class transitions can be difficult to manage (Fink, 2017); however, others assert departmentization allows for a shared social and emotional connection and educators as a team can better meet student needs (Minott, 2016). In addition, Nelson (2014) argued a departmental setting may allow for a complex environment that allows students to collaborate, problem solve, and work with other individuals to enrich their learning experience.

Others agree self-containment may indeed allow for more instructional time, but it is a tradeoff of quantity over quality, and there are many other negative factors associated with self-containment (Fink, 2017; Strohl, Schmertzing, Schmertzing, & Hsiao 2014). The social, emotional, and cognitive development of students is the goal of schooling, and many accept the fact that self-containment focuses on the whole child while departments focus on subjects; however, other factors such as teacher workload, stress level, burnout, and content preference

can have an impact on student social, emotional, and cognitive development (Fink 2017; Strohl, et al., 2014). When identifying which grades require additional focus on social and emotional development, most educators agree the lower elementary grades (i.e., first -third) is the time when an emphasis should be placed on these areas. There has been discussion as to what constitutes the middle grades, where they start and where they end. The specter of the sixth grade has a recurring spot in many discussions as being the center point of the middle grades, and special consideration should be taken to ensure sixth-graders' transition into adolescence is supported by their learning environment (Lounsbury, 1988).

McPartland (1987) explored the balance between rigorous educational requirements and positive student-teacher relationships. Data were collected from the Pennsylvania Educational Quality Assessment and then compared those data to classes that were organized in different ways. These classes included self-contained, departmentalized, and blocked. In addition, the administration in the identified schools submitted data regarding socio-economic status, race, enrollment size, and staffing. McPartland found there are no one-size-fits-all approaches to education – especially in the middle grades. He also suggested self-contained classes may sacrifice academic achievement, but build stronger school and class cultures, whereas a departmental setting produces the opposite. In order for schools to establish their best fit, McPartland recommended schools consider many factors, and pay particular attention to those unique to the school.

Other scholars have echoed the warning of not considering a one-size-fits-all approach to the educational setting and working to ensure leaders are creating healthy learning environments that foster support for social and emotional growth (Yearwood, 2011). Yearwood also suggested the easing of individual responsibility for all core subjects through departmentalization may

allow the teacher to spend additional time creating a healthy environment for social and emotional development.

Much of the discussion about the 21st century learner is related to preparing students to be college and/or career ready. Recently, the conversation and questions have been directed to preparing students for college and careers in the elementary grades (Pulliam & Bartek, 2017). Pulliam and Bartek suggest through specialized education and departmental settings students may be exposed to many opportunities, and the breaking down of preconceived notions around careers and gender roles may take place. As was discussed earlier, Fink (2017) noted content knowledge and academics are only part of the complex equation of public schooling, and any discussion about preparing our youth for college or the workforce must include their social development. Fink further suggested it would be backward thinking to place all our effort on learning standards and content knowledge, while paying little attention to social development, and there may be a possibility of allowing curriculum and content to overwhelm social and emotional development. Lounsbury (1988) suggests students in the middle grades need time to develop socially if they are to grow as collaborators and team players; moreover, it has been argued there may be lost educational opportunities in self-contained settings due to their restrictive nature. Students in the self-contained setting may be restricted to the whims of the teacher and willingness to teach all content equally.

When discussing school-aged children it is important to consider how student behavior can influence the overall climate, and have a negative effect on student learning if bad behavior is not corrected. It is equally important to remember any discussion about discipline should be less about punishment, and more about correction, learning, and understanding. Hood (2010) reported elementary schools in a Florida district restructured and followed a departmentalized

model and experienced no change in behavioral problems when compared to previous self-contained settings.

Cauley and Jovanovich (2006) suggested developing an approach that helps alleviate anxieties associated with transitioning from elementary/self-contained to the middle school/departmentalized setting could benefit the students socially and academically. In addition, these scholars report students and parents have concerns about transitioning from one setting to a new setting. Among these concerns are school rules, and the consequences for breaking rules. Male students with past behavioral problems are particularly at risk for bad behavior and disciplinary consequences (Cauley & Jovanovich, 2006). Cauley and Jovanovich also noted students who lack proper social skills may be more likely not to adjust to their new departmental setting and continue to be disciplinary problems. Since the inception of public schooling, schools cast a similar reflection to the communities they serve, and many of the negative behavioral aspects associated with certain socio-economic conditions can, and will, bleed into school culture. Therefore, it is important for the school to develop an approach that models good character, reduces bad behavior, and cultivates overall student learning and achievement (Vincent, 1999).

Establishing programs that help meet social and emotional needs may be key to deterring and addressing unwanted behaviors, but any attempt must be balanced with the school schedule and resources available (Pasi, 1997). In addition, Pasi (1997) suggested the secondary departmentalized model lends itself to an approach that allows for social and emotional development programs, such as character development and developmental guidance. Pasi also notes several skills acquired in a departmental setting that has incorporated social and emotional development curriculum led to an improvement in overall behavior. In addition, it has also been

observed an increase in an administrative presence in the classroom can lead to a decrease in unwanted student behavior – regardless of the employed instructional model (Keesor, 2005). Any decrease in the amount of time dealing with unwanted behavioral problems could lead to an increase in time spent on character development, which in turn could help create a stronger school culture, ultimately resulting in a further decrease in unwanted behaviors.

Jensen (2009) argues poverty causes a need to focus on the whole child, and assume responsibility for not only their cognitive development, but their social and emotional development as well. Many of the interventions needed to meet the needs of the whole child may not fit traditional models, and it is important to develop school-wide strategies that meet the needs of all learners (Jensen, 2009; Souers & Hall, 2016).

The toxic effect poverty has on the brain is well documented, and to assume students from poverty can, and should, be educated as those from middle class backgrounds may not be the best approach (Souers & Hall 2016; Payne 2005). Students who live in conditions associated with poverty bring with them unresolved social and emotional damage that may prevent them from learning; moreover, these same issues can cause a classroom disruption and lead to disciplinary issues when the student attempts to create a familiar climate of disruption and confusion (Souers & Hall, 2016). The key to overcoming the negative effect associated with poverty is a complex equation that requires an understanding of the poverty mindset, a willingness to focus on the whole child (social, emotional, and cognitive development), and build lasting relationships (Souers & Hall, 2016; Jensen, 2009; Payne, 2005).

**Summary**

Considering the literature reviewed, there is a need for further understanding of the effect departmentalized instructional delivery systems have on students in the upper-elementary grades. A common theme among the sources surveyed is the word of warning about not applying one educational model across all educational settings. Simply departmentalizing a grade level may not be the only solution, and it is the responsibility of those making these decisions to consider all factors, and work to establish a learning environment that not only meets the students' educational needs, but their social and emotional needs as well.

Strong leadership and a teacher's willingness/ability to provide specialized instruction in a departmentalized setting also have strong undercurrents in the scholarly works reviewed for this study. In the end, the success of any educational restructuring may depend upon a multitude of factors and decision makers should start slow and consider all relevant factors and stakeholder perceptions.

# CHAPTER 3

# RESEARCH METHODS

Chapter three contains a description of the methods used in this study. The chapter is organized into the following sections: research design, population, setting, data collection, and limitations.

## Research Design

This study used a case study method. The subjects being studied were limited to a small group in a relatively geographically isolated area; therefore, a case study model was the most appropriate (Zainal, 2007). The study of a classroom throughout a school year requires a level of flexibility, direct observation, interviews, and various collected data points (Fidel, 1983). This case study approach has employed several data collecting techniques. These techniques include: surveys, assessment data collection, and discipline reports.

## Population

The student population for this study included 126 sixth-grade students per year whose fifth grade followed the traditional elementary setting (2017-2018), and 132 fifth-grade students who were the first to experience the departmental setting (2018-2019). In addition, the six teachers in the school that has departmentalized math and ELA were surveyed.

## Setting

This study was set in a semi-rural setting in Kanawha County, West Virginia, and included students from one middle school and two elementary schools that feed into the identified middle school. The elementary schools that feed into the middle school had similar demographics; however, one of the elementary schools was larger than the other, and the smaller of the two was set in a more rural setting. The larger of the two elementary schools served

approximately 120 student per grade level (i.e., first – fourth grade), and the smaller school served approximately 30 students per grade level (ZOOMWV, 2019b).

The middle school in which the study took place had a student population of approximately 600. During the school year 2018-19 the student population was 48% female and 52% male, 99% White, 48% low socio-economic statues, and < 1% were English language learners. Student enrollment is continually declining in the identified middle school and across the district; however, the demographics associated with the school at the center of the study have remained consistent except for a small increase in those receiving special education services (ZOOMWV, 2019b).

**Data Collection**

This study used data from two sources: summative assessment data from the West Virginia Department of Education (WVDE), student discipline reports from the West Virginia Department of Education's Information Reporting System (WVEIS), and individual teacher survey data.

Each year West Virginia school children in grades three through eight are required to take the West Virginia General Summative Assessment. This summative assessment is designed to measure student performance in English language arts and mathematics (WVDE, 2019a). Student scores were collected from the WVDE online reporting system. Only scores from students that participated in a full academic year were considered. Partial academic year students are withheld from the final scoring report, and do not count toward the school's overall academic performance (WVDE, 2019a).

Surveys (Appendix C) were distributed to the participating teachers at the end of 2018-2019 school year and collected within the final weeks of May, 2019. The researcher received the

responses with no identifying information. The purpose of these surveys was to gain an understanding of the teachers' perceptions and attitudes toward departmentalization after their initial year of experience. These surveys address the following: a) first experience; b) comfortability with mathematics instruction; c) comfort with English language arts instruction; d) attitude toward a departmentalized setting in fifth grade; e) amount of collaboration, communication, and teaming compared to a self-contained setting; f) workload; g) data-driven instruction; h) assessment intervention usage (i.e., formative and interim); i) personal educational philosophies; and k) a general attitude toward their transition from self-containment to a departmental setting. A copy of this survey is included as Appendix C.

Disciplinary data were collected from the West Virginia Department of Education's Information System (WVEIS) on students who were taught in both self-contained and departmentalized educational delivery systems. For the purpose of this study, disciplinary infractions were defined as events in which administrator intervention was required in any attempt to correct unwanted behaviors. Disciplinary infractions were categorized as follows: a) Discipline I – Minor disciplinary infraction that most commonly related to classroom disruptions and immature behavior; b) Discipline II – Minor to moderate disciplinary infractions that most commonly relate to classroom disruptions, hallway disruptions, and physical altercation; c) Discipline III – Moderate to severe disciplinary infractions that most closely relate to safe school violations, drug activity, violent acts, and minor weapons; d) Discipline IV – Acts committed that violate statutes of law.

**Limitations**

One possible limitation is the setting in which the study was conducted, a semi-rural setting with a substantial amount of the population living in poverty. Moreover, the

overwhelming majority of the sample is White and from a similar cultural background. The results and conclusions drawn from this study should not be categorically rejected in future studies involving different demographics, but they should be approached with caution when analyzing different situations.

The findings were also limited to the perceptions of the teachers who responded to the survey rather than being generalized to the larger population of middle school teachers as teachers who responded may have done so out of particular bias, either positive or negative, about the effectiveness or desirability of departmentalization. The potential for socially desirable responses to the survey items may also have increased given the researcher's position as principal in the school which has departmentalized. The researcher's professional experience as a principal and former teacher may constitute a source of empathy and may enhance effectiveness in eliciting and understanding respondents' perceptions; however, this relationship may be viewed as a limitation in that it is a potential source of bias.

# CHAPTER 4

# FINDINGS

## Introduction

Chapter four presents the findings from this case study. Study findings are organized and presented by research question. Chapter sections include sections on student attributes, student mathematical achievement by instructional delivery system, student English language arts achievement by instructional delivery system, student mathematical achievement for students receiving special education services by instructional delivery system, and student English language arts achievement for students receiving special education services by instructional delivery system. Additional sections include behavioral incidents requiring administrative interventions in self-contained versus departmentalized instructional delivery systems, and teachers' perceptions regarding teaching in a self-contained versus departmentalized instructional delivery system. A final section provides a chapter summary.

## Student Attributes

Case study subjects were in fifth-grade classes in academic years 2017-18 and 2018-19 at a single middle school in a rural setting in central Appalachia. A total of 258 students were included in the two groups. The 2017-18 student group ($n$ = 126) followed a self-contained instructional delivery system. Fifty-seven (45%) of these students were female and 69 (55%) were male. Twenty-seven (21%) of the students received special education services. Of the 126 students, 125 (99%) identified as White. The 2018-19 group of fifth-graders ($n$ = 132) followed a departmentalized instructional delivery system. Sixty-four (48%) of these students were female and twenty-eight (21%) received special education services. Of the 132 students, 130 (98%) identified as White. Student attribute data are presented in Table 1.

Table 1

*Student Attributes*

| Attributes | | Self-contained | | Departmentalized | | Totals | |
|---|---|---|---|---|---|---|---|
| | | *n* | *%* | *n* | *%* | *n* | *%* |
| Sex | | | | | | | |
| | Male | 69 | 54.8 | 68 | 51.5 | 126 | 46.8 |
| | Female | 57 | 45.2 | 64 | 48.5 | 132 | 53.2 |
| Special Education | | | | | | | |
| | Yes | 27 | 21.1 | 28 | 21.2 | 55 | 21.1 |
| | No | 99 | 78.9 | 104 | 78.8 | 203 | 78.9 |
| Ethnicity | | | | | | | |
| | White | 125 | 98.5 | 130 | 98.5 | 255 | 98.5 |
| | Other | 1 | 1.5 | 2 | 1.5 | 3 | 1.5 |

*N*=258 (Self-contained *n* = 126) (Departmentalized *n* = 132)

**Mathematical Achievement by Instructional Delivery System**

Six categorical mean scale scores were analyzed to determine any differences in students' mathematical performance based on instructional delivery systems. These categories included overall mathematics; operational and algebraic thinking; number and operation in base ten and fractions; measurement, data, and geometry; modeling and problem solving; and mathematical reasoning.

The overall mean mathematics scale score for the students in the self-contained setting was 468.0 (*SD* = 57.7), while the overall mean mathematics scale score for the students in the departmentalized setting was 468.2 (*SD* = 48.6). The mean scale score for operations and algebraic thinking for students in the self-contained instructional delivery system was 456.0 (*SD = 78.2*), compared to a mean score of 448.4 (*SD* = 64.8) for students in a departmentalized setting. Students in the self-contained instructional delivery system had a mean scale score of 471.5 (*SD* = 60.1) in the number and operation in base ten and fractions category compared to a

mean scale score of 472.1 (*SD* = 51.0) for students in the departmentalized system. Independent samples *t*-tests results indicate none of the differences in these mean scale scores were statistically significant based on the comparison of student performance in the two instructional delivery systems. These data are presented in Table 2.

The mean scale score for measurement, data and geometry for the students in the self-contained setting was 459.5 (*SD* = 72.3). The mean scale score for measurement, data and geometry was 461.7 (*SD* = 48.6) for students in the departmentalized setting. The mean scale score for modeling and problem solving for students in the self-contained instructional delivery system was 447.7 (*SD* = 92.7), compared to a mean scale score of 466.2 (*SD* = 56.8) for the departmentalized setting. Students in the self-contained instructional delivery system had a mean scale score of 459.4 (*SD* = 74.4) in the mathematical reasoning category compared to a mean scale score of 470.4 (*SD* = 56.7) for students in the departmentalized system. Independent samples *t*-tests results indicate none of the differences in these three mean scale scores were statistically different based on the comparison of student performance in the two instructional delivery systems. These data are also presented in Table 2

Table 2

*Student Mathematical Achievement by Instructional Delivery System*

| | Self-contained | | Departmentalized | | |
|---|---|---|---|---|---|
| Test | *M* | *SD* | *M* | *SD* | *p Value* |
| Mathematics Scale Score | 468.0 | 57.7 | 468.2 | 48.6 | .98 |
| Operations and Algebraic Thinking | 456.0 | 78.2 | 448.4 | 64.8 | .393 |
| Number and Operation in Base Ten and Fractions | 471.5 | 60.1 | 472.1 | 51.0 | .810 |
| Measurement, Data, and Geometry | 459.5 | 72.3 | 461.7 | 56.9 | .786 |
| Modeling and Problem Solving | 447.7 | 92.7 | 466.2 | 56.8 | .051 |
| Mathematical Reasoning | 459.4 | 74.4 | 470.4 | 56.7 | .175 |

*N*=258 (Self-contained *n* = 126) (Departmentalized *n* = 132)

**ELA Achievement by Instructional Delivery System**

Four categorical mean scale scores were analyzed to determine any differences in students' English language arts performance based on instructional delivery system. These categories included overall English language arts; reading literacy text; reading informational text; and writing and language.

The overall mean English language arts scale score in the self-contained setting was 605.0 (*SD* = 42.5), while the comparable mean scale score in the departmentalized setting was

602.9 (*SD* = 46.9). The mean scale score for reading literacy text in the self-contained setting was 608.1 (*SD* = 65.4) compared to a mean scale score of 594.4 (*SD* = 67.2) for students in a departmentalized setting. Students in the self-contained instructional delivery system had a mean scale score of 588.6 (*SD* = 76.6) in reading informational text compared to a mean scale score of 598.0 (*SD* = 67.3*)* for students in the departmentalized setting. The mean scale score for writing and language for students in the self-contained setting was 598.0 (*SD* = 48.0) compared to a mean scale score of 602.9 (*SD* = 52.6) for students in a departmental setting. Independent samples T-test results indicate none of the differences in these mean scale scores were statistically significant based on the comparison of student performance in the two instructional delivery systems. These data are presented in Table 3.

Table 3
*Student English Language Arts Achievement by Instructional Delivery System*

| | Self-contained | | Departmentalized | | |
|---|---|---|---|---|---|
| Test | *M* | *SD* | *M* | *SD* | *p Value* |
| ELA | 605.0 | 42.5 | 602.9 | 46.9 | .708 |
| Reading Literary Text | 608.1 | 65.4 | 594.4 | 67.2 | .930 |
| Reading Informational Text | 588.6 | 76.6 | 598.0 | 67.3 | .099 |
| Writing and Language | 598 | 47.9 | 602.9 | 52.6 | .306 |

*N* = 258 (Self-contained *n* = 126) (Departmentalized *n* = 132)

**Mathematical Achievement by Instructional Delivery System and Sex**

Six categorical mean scale scores were analyzed to determine any differences in students' mathematical performance based on instructional delivery system and sex. These categories

included overall mathematics; operational and algebraic thinking; number and operation in base ten and fractions; measurement, data, and geometry; modeling and problem solving; and mathematical reasoning.

The overall mean mathematics scale score in the self-contained setting for female students was 473.28 (*SD* = 61.25) while the comparable score for male students in the self-contained setting was 463.33 (*SD* = 54.28). The mean difference between the two groups was 9.63 ($p$ = .340). The overall mean mathematics scale score in the departmentalized setting for female students was 473.14 (*SD* = 46.94) while the overall mathematics scale score for male students in the departmentalized setting was 463.49 (*SD* = 49.92). The mean difference between the two groups was 9.66 ($p$ = .255). The mean scale score for operations and algebraic thinking for females in the self-contained setting was 472.13 (*SD* = 75.45) compared to a mean score of 442.64 (*SD* = 78.4) for male students in the same system. The mean difference between the two groups was 29.489 ($p$ = .030). The mean scale score for operations and algebraic thinking for females in the departmentalized setting was 452.59 (*SD* = 66.46) compared to a mean score of 444.44 (*SD* = 63.5) for male students in the same setting. The mean difference between the two groups was 8.15 ($p$ = .472).

Female students in the self-contained instructional delivery system had a mean scale score of 476.70 (*SD* = 64.56) in numbers and operations in base ten and fractions compared to a mean scale score of 467.23 (*SD* = 56.35) for male students in the same setting. The mean difference between the two groups was 9.47 ($p$ = .368). Female students in the departmentalized instructional delivery system had a mean scale score of 478.64 (*SD* = 52.06) in numbers and operations in base ten and fractions compared to a mean scale score of 467.66 (*SD* = 49.72*)* for

male students in the same setting. The mean difference between the two groups was 10.66 ($p$ = .231).

The mean scale score for measurement, data, and geometry for female students in the self-contained setting was 465.70 ($SD$ = 71.23) compared to the mean scale score for males in the same setting of 454.37 ($SD$ = 73.28). The mean difference between the two groups was 11.33 ($p$ = .371). The mean scale score for measurement, data, and geometry for female students in the departmentalized setting was 463.8 ($SD$ = 55.53), compared to the mean scale score for males of 459.62 ($SD$ = 58.5). The mean difference between the two groups was 4.20 ($p$ = .674). Female students in the self-contained instructional delivery system had a mean scale score of 455.27 ($SD$ = 98.3) in modeling and problem solving compared to a mean scale score of 441.47 ($SD$ = 88.04*)* for male students in the same setting. The mean difference between the two groups was 13.80 ($p$ = .395). Female students in the departmentalized instructional delivery system had a mean scale score of 473.61 ($SD$ = 52.45) in modeling and problem solving compared to a mean scale score of 459.62 ($SD$ = 60.20*)* for male students in the same setting. The mean difference between the two groups was 14.40 ($p$ = .147).

The use of mathematical reasoning scale score in the self-contained setting for female students was 462.63 ($SD$ = 81.8), while the use of mathematical reasoning scale score for male students in the self-contained setting was 456.67 ($SD$ = 68.1). The mean difference between the two groups was 5.96 ($p$ = .647). The use of mathematical reasoning mean scale score in the departmentalized setting for female students was 479.00 ($SD$ = 56.04) while the use of mathematical reasoning scale score for male students in the departmentalized setting was 462.34 ($SD$ = 56.47). The mean difference between the two groups was 16.66 ($p$ = .091).

Independent sample *t*-test results indicated a statistically significant difference between male and female students in the self-contained instructional delivery system in the sub-category of operations and algebraic thinking. Independent samples *t*-test results did not indicate any differences in the remaining mathematical sub-categories mean scale scores that were significant based on student sex and mathematics performance in the two instructional delivery systems. These data are presented in Table 4

Table 4

*Independent Samples t-Test Results for Mathematical Scale Scores Performance by Delivery System and Sex*

| | Females | | Males | | | |
|---|---|---|---|---|---|---|
| Test/Del. System | *M* | *SD* | *M* | *SD* | *M Difference* | *p Value* |
| Overall Mathematic | | | | | | |
| Sc | 473.28 | 61.25 | 463.33 | 54.28 | 9.63 | .340 |
| Dp | 473.14 | 46.94 | 463.49 | 49.92 | 9.66 | .255 |
| Operation Algebraic Thinking | | | | | | |
| Sc | 472.13 | 75.45 | 442.64 | 78.4 | 29.49 | .030* |
| Dp | 452.59 | 66.46 | 444.44 | 63.5 | 8.15 | .472 |
| Number and Operations in Base Ten and Fractions | | | | | | |
| Sc | 476.70 | 64.56 | 467.23 | 56.35 | 9.47 | .368 |
| Dp | 478.64 | 52.06 | 467.66 | 49.72 | 10.66 | .231 |
| Measurement, Data, Geometry | | | | | | |
| Sc | 465.70 | 71.23 | 454.37 | 73.28 | 11.33 | .371 |
| Dp | 463.8 | 55.53 | 459.62 | 58.5 | 4.20 | .674 |
| Modeling and Problem Solving | | | | | | |
| Sc | 455.27 | 98.3 | 441.47 | 88.04 | 13.80 | .395 |
| Dp | 473.61 | 52.45 | 459.62 | 60.2 | 14.40 | .147 |
| Mathematical Reasoning | | | | | | |
| Sc | 462.63 | 81.8 | 456.67 | 68.1 | 5.965 | .647 |
| Dp | 479.00 | 56.04 | 462.34 | 56.47 | 16.66 | .091 |

(Dp) Departmentalized $n = 132$ (Females = 64, Male = 68) $N = 258$ $*p \leq .05$
(Sc) Self-contained $n = 126$ (Females = 57, Males = 69)

**ELA Achievement by Instructional Delivery System and Sex**

Four categorical mean scale scores were analyzed to determine any differences in students' English language arts performance based on instructional delivery systems and sex. These categories included overall English language arts, reading literacy text, reading informational text, and writing and language.

The overall mean English language arts scale score in the self-contained setting for female students was 615.96 (*SD* = 42.8) while the comparable score for male students in the self-contained setting was 595.94 (*SD* = 40.3). The mean difference between the two groups was 20.02 ($p$ = .008). The overall mean English language arts scale score in the departmentalized setting for female students was 609.86 (*SD* = 43.6) while the overall English language arts score for male students in the departmentalized setting was 596.37 (*SD* = 44.14). The mean difference between the two groups was 13.49 ($p$ = .098). The mean scale score for reading literacy text scale score for females in the self-contained setting was 621.70 (*SD* = 66.68) compared to a mean score of 596.26 (*SD* = 62.68) for male students in the same setting. The mean difference between the two groups was 24.85 ($p$ = .033). The mean scale score for reading literacy text scale score for females in the departmentalized setting was 604.27 (*SD* = 60.05) compared to a mean score of 585.10 (*SD* = 67.48) for male students in the same setting. The mean difference between the two groups was 19.16 ($p$ = .102).

Female students in the self-contained instructional delivery system had a mean scale score of 602.70 (*SD* = 72.01) in reading informational text compared to a mean scale score of 576.88 (*SD* = 78.73*)* for male students in the same setting. Female students in the departmentalized instructional delivery system had a mean scale score of 601.23 (*SD* = 66.06) in reading informational text compared to a mean scale score of 597.47 (*SD* = 68.73*)* for male

students in the same setting. The mean difference between the two groups were 6.76 ($p$ = .565). The mean scale score for writing and language for female students in the self-contained setting was 610.42 ($SD$ = 44.38), compared to the mean scale score for males of 587.71 ($SD$ = 48.55). The mean difference between the two groups was 22.71 ($p$ = .008). The mean scale score for writing and language for female students in the departmentalized setting was 601.23 ($SD$ = 49.24) compared to the mean scale score for males of 595.18 ($SD$ = 54.86). The mean difference between the two groups was 15.84 ($p$ = .083).

Independent *t*-test results indicate statistically significant differences between male and female students in overall ELA ($p$ = .008), reading literacy ($p$ = .033), and writing and language ($p$ = .008). Independent *t*-test results did not report a statistically significant difference between male and female students in the sub-category of reading Informational text ($p$ = .059). These data are presented in Table 5.

Table 5

*Independent Sample t-Test Results for ELA Scale Score Performance by Delivery System and Sex*

| | Females | | Males | | | |
|---|---|---|---|---|---|---|
| Test/Del. System | *M* | *SD* | *M* | *SD* | *M Difference* | *p Value* |
| Overall ELA | | | | | | |
| Sc | 615.96 | 42.8 | 595.94 | 40.3 | 20.02 | .008* |
| Dp | 609.86 | 43.6 | 596.37 | 44.14 | 13.49 | .098 |
| Reading Literary Text | | | | | | |
| Sc | 621.70 | 66.68 | 596.26 | 62.68 | 24.85 | .033* |
| Dp | 604.27 | 60.05 | 585.10 | 67.48 | 19.16 | .102 |
| Reading Informational Text | | | | | | |
| Sc | 602.70 | 72.01 | 576.88 | 78.73 | 25.82 | .059 |
| Dp | 601.23 | 66.06 | 597.47 | 68.73 | 6.76 | .565 |
| Writing and Language | | | | | | |
| Sc | 610.42 | 44.38 | 587.71 | 48.55 | 22.71 | .008* |
| Dp | 601.23 | 49.24 | 595.18 | 54.86 | 15.84 | .083 |

(Dp) Departmentalized $n$ = 132 (Females = 64, Male = 68) *$p \leq .05$
(Sc) Self-contained $n$ = 126 (Females = 57, Males = 69)

**ELA Achievement by Instructional Delivery System and Receipt of Special Education Services**

Four categorical mean scale scores were analyzed to determine any differences in students receiving special education services in English language arts performance based on instructional delivery systems. These categories included overall English language arts; reading literacy text; reading informational text; and writing and language.

The overall mean English language arts scale score in the self-contained setting for students receiving special education services was 564.93 ($SD$ = 32.39) while the comparable score for students receiving special education services in the departmentalized setting was 554.29 ($SD$ = 32.63). The mean difference between the two groups was 10.64 ($p$ = .230). The

mean scale score for reading literacy text for students receiving special education services in the self-contained setting was 561.93 (*SD* = 60.24) compared to a mean score of 540.04 (*SD* = 68.96) for students receiving special education services in a departmentalized setting. The mean difference between the two groups was 21.90 (*p* = .216). Students receiving special education services in in the self-contained instructional delivery system had a mean scale score of 549.44 (*SD* = 66.20) in reading informational text compared to a mean scale score of 543.96 (*SD* = 62.27*)* for students receiving special education services in in the departmentalized setting. The mean difference between the two groups was 5.48 (*p* = .753).

The mean scale score for writing and language for students receiving special education services in in the self-contained setting was 553.37 (*SD* = 41.8), compared to a mean scale score of 549.64 (*SD* = 35.8) for students receiving special education services in the departmentalized setting. There was a mean difference of 3.73 (*p* = .724) between the two groups. Independent samples *t*-test results indicate none of the differences in these mean scale scores were statistically significant based on the comparison of the performance of students receiving special education services in the two instructional delivery systems. The data are presented in Table 6.

Table 6

*Independent Sample t-Test Results for ELA Scale Score Performance by Delivery System for Students Receiving Special Education Services*

| | Special Education Services | | | |
|---|---|---|---|---|
| Test/Del. System | *M* | *SD* | *M Difference* | *p Value* |
| Overall ELA | | | | |
| Sc | 564.93 | 32.39 | | |
| Dp | 554.29 | 32.63 | 10.64 | .230 |
| Reading Literary Text | | | | |
| Sc | 561.93 | 60.24 | | |
| Dp | 540.04 | 68.96 | 21.90 | .216 |
| Reading Informational Text | | | | |
| Sc | 549.44 | 66.20 | | |
| Dp | 543.96 | 62.27 | 5.48 | .753 |
| Writing Language | | | | |
| Sc | 553.37 | 41.8 | | |
| Dp | 549.64 | 35.8 | 3.73 | .724 |

*N* = 55 ((Dp) Departmentalization *n* = 28; (Sc) Self-contained *n* = 27)

**Mathematics Achievement by Instructional Delivery System and Special Education Services**

Six categorical mean scale scores were analyzed to determine any differences in mathematics performance for students receiving special education services based on instructional delivery systems. These categories included overall mathematics; operational and algebraic thinking; number and operation in base ten and fractions; measurement, data, and geometry; modeling and problem solving; and mathematical reasoning.

The overall mean mathematics score for the students receiving special education services in the self-contained setting was 419.22 (*SD* = 63.10), while overall mean mathematics scale score for the students receiving special education services in the departmentalized setting was 418.18 (*SD* = 45.9). There was a mean difference of 1.05 (*p* value =.944) between the two groups. The mean scale score for operations and algebraic thinking for students receiving special education services in the self-contained instructional delivery system was 401.78 (*SD* = 71.00), compared to a mean score of 394.68 (*SD* = 53.69) for students receiving special education services in a departmentalized setting. There was a mean difference of 7.10 (*p* value = .677) between the two groups.

Students receiving special education services in the self-contained instructional delivery system had a mean scale score of 423.70 (*SD* = 65.28) in the number and operation in base ten and fractions category compared to a mean scale score of 422.89 (*SD* = 48.6) for students receiving special education services in the departmentalized system. There was a mean difference of .81 (*p value* = .958) between the two groups.

The mean scale score for measurement, data and geometry for students receiving special education services in the self-contained setting was 404.04 (*SD* = 72.48). The mean scale score for measurement, data and geometry was 408.57 (*SD* = 61.64) for the students receiving special education services in the departmentalized setting. There was a mean difference of 4.53 (*p value* = .803) between the two groups. The mean scale score for modeling and problem solving for students receiving special education services in the self-contained instructional delivery system was 379.11 (*SD* = 82.63) compared to a mean scale score of 412.29 (*SD* = 56.69) for students receiving special education services in the departmentalized setting. The mean difference between the two was 33.18 (*p* = .087).

Students receiving special education services in the self-contained instructional delivery system had a mean scale score of 415.15 (*SD* = 73.56) in the mathematical reasoning category compared to a mean scale score of 413.82 (*SD* = 54.17) for students receiving special education services in the departmentalized system. The mean difference between the two was 1.33 (*p* = .939).

Independent samples *t*-test results indicate none of the differences in these mean scale scores in all mathematics categories for students receiving special education services were statistically significant based on the comparison of student performance in the two instructional delivery systems. These data are presented in Table 7.

Table 7

*Independent Sample t-Test Results for Mathematics Scale Score Performance by Delivery System and Students Receiving Special Education Services*

| | Spec. Education Services | | | |
|---|---|---|---|---|
| Test/Del. System | *M* | *SD* | *M Difference* | *p Value* |
| Mathematics | | | | |
| Sc | 419.22 | 63.10 | 1.05 | .944 |
| Dp | 418.18 | 45.9 | | |
| Operations Algebraic Thinking | | | | |
| Sc | 401.78 | 71.00 | 7.10 | .677 |
| Dp | 394.68 | 53.69 | | |
| Number Operations in Base Ten | | | | |
| Sc | 423.70 | 65.28 | .81 | .958 |
| Dp | 422.89 | 48.60 | | |
| Measurement, Data, Geometry | | | | |
| Sc | 404.04 | 72.48 | 4.53 | .803 |
| Dp | 408.57 | 61.64 | | |
| Modeling/Problem Solving | | | | |
| Sc | 379.11 | 82.63 | 33.18 | .087 |
| Dp | 412.29 | 56.69 | | |
| Mathematical Reasoning | | | | |
| Sc | 415.15 | 73.56 | 1.33 | .939 |
| Dp | 413.82 | 54.17 | | |

(Dp) Departmentalized *n* = 28
(Sc) Self-contained *n* = 27

**Behavioral Incidents by Instructional Delivery System**

Three disciplinary categories were analyzed to determine any differences in disciplinary infractions between students receiving instruction in self-contained and departmentalized instructional delivery systems. In the self-contained setting, 19 (26.4%) Discipline I (minor offenses) infractions were committed by 10 students compared to 53 (73.6%) infractions committed by 24 students in the departmentalized setting. A total of 72 Discipline I infractions were committed by 34 students across the two groups.

Ten (37.0%) Discipline II (minor – moderate offenses) infractions were committed by 10 students in the self-contained setting compared to 17 (63.0%) Discipline II infractions committed by 12 students in the departmentalized setting. A total of 27 infractions were committed by 22 students across the two groups. Ten (62.5%) Discipline III (moderate – major offenses) infractions were committed by seven students in the self-contained setting. Six (37.5%) Discipline III infractions were committed by six student in the departmentalized setting. A total of 16 infractions were committed by 13 students. These data are presented in Table 8.

Table 8

*Comparison of Student Disciplinary Infraction by Instructional Delivery System*

| Behavior | Self-Contained | | Departmentalized | | Total | |
|---|---|---|---|---|---|---|
| | *n/n1* | % | *n/n1* | % | *n/n1* | % |
| Discipline I (minor) | 19/10 | 26.4 | 53/24 | 73.6 | 72/34 | 100 |
| Discipline II (minor – moderate) | 10/10 | 37.0 | 17/12 | 63.0 | 27/22 | 100 |
| Discipline III (moderate – severe) | 10/7 | 62.5 | 6/6 | 37.5 | 16/13 | 100 |

*n/n1* = number of infractions/number of students committing infraction *N = 258*
% = percentage of infractions. Self-contained *n*=126 Departmentalized *n*=132

**Behavioral Incidents by Instructional Delivery System and Sex**

Three disciplinary categorizes were analyzed to determine any differences in disciplinary infractions between students receiving instruction in self-contained and departmentalized instructional delivery systems based on sex. In the self-contained setting 17 (33.3%) Discipline I (minor offenses) infractions were committed by eight male students compared to two (9.5%) infractions committed by two female students. Eleven (66.7) male students committed 34 infractions in the departmentalized setting compared to 19 (98.5%) infractions committed by 13 female students. A total of 72 Discipline I infractions were committed by 34 individual students between the two groups.

Eight (36.4%) Discipline II (minor – moderate offenses) infractions were committed by eight individual male students in the self-contained setting compared to two (46.0%) infractions committed by two individual female students. Nine male students committed 14 (63.6%) infractions in the departmentalized setting compared to three (60.0%) infractions committed by

three female students. Twenty-seven infractions were committed by 22 students across the two groups. Ten male students committed seven (62.5%) Disciplinary III (moderate – severe) in the self-contained setting compared to six male students who committed six (39.5%) infractions in the departmentalized instructional delivery system. There were no female Disciplinary III infractions reported in either educational delivery system. Sixteen male students committed 13 (100.0%) Disciplinary III infraction across the two delivery systems. These data are presented in Table 9.

Table 9

*Student Disciplinary Infractions by Instructional Delivery System and Sex*

| | | Self-Contained | | Departmentalized | | Total | |
|---|---|---|---|---|---|---|---|
| Behavior | Sex | *n/n1* | % | *n/n1* | % | *n/n1* | % |
| Discipline I (minor) | | | | | | | |
| | Male | 17/8 | 33.3 | 34/11 | 66.7 | 51/19 | 100. |
| | Female | 2/2 | 9.5 | 19/13 | 98.5 | 21/15 | 100. |
| Discipline II (minor – moderate) | | | | | | | |
| | Male | 8/8 | 36.4 | 14/9 | 63.6 | 27/22 | 100. |
| | Female | 2/2 | 46.0 | 3/3 | 60.0 | 5/5 | 100. |
| Discipline III (moderate – severe) | | | | | | | |
| | Male | 10/7 | 62.5 | 6/6 | 39.5 | 16/13 | 100. |
| | Female | - | - | - | - | - | - |

*n/n1* = number of infractions/number of students
% = percentage of infractions

Male (SC = 69, Dep. 68)
Female (SC = 57, Dep. 64)

**Behavioral Incidents by Instructional Delivery System and Special Education Services**

Three disciplinary categories were analyzed to determine any differences in disciplinary infractions between students receiving special education services in self-contained and departmentalized instructional delivery systems. Ten (27.8%) Discipline I (minor offenses) infractions were committed by four students receiving special education services in the self-contained setting compared to 26 (72.2%) infractions committed by six students receiving special education services in the departmentalized setting. Four students not receiving special education services committed nine (25.0%) infractions in the self-contained setting compared to 27 (75.0%) infractions committed by 18 students not receiving special education services in the departmentalized setting.

Three (38.0%) Discipline II (minor-moderate offenses) infractions were committed by three students receiving special education services in the self-contained setting compared to 5

(62.0%) infractions committed by four students receiving special education services in the departmentalized setting. Seven students not receiving special education services committed seven (36.8%) infractions in the self-contained setting compared to 12 (63.2%) infractions committed by 8 students not receiving special education services in the departmentalized setting.

Seven (77.8%) Discipline III (moderate-severe offenses) infractions were committed by four students receiving special education services in the self-contained setting compared to two (22.2%) infractions committed by two students receiving special education services in the departmentalized setting. Three students not receiving special education services committed three (42.9%) infractions in the self-contained setting compared to four (57.1%) infractions committed by four students not receiving special education services in the departmentalized setting.

In summary, results indicate students receiving special education services had more Discipline I and II incidents in departmentalized settings compared to students in self-contained settings. Students receiving special education services had fewer Discipline III incidents while receiving instruction in departmental settings compared to students in self-contained settings. These data are presented in Table 10.

Table 10

*Student Disciplinary Infractions by Instructional delivery System and Student Receipt of Special Education Services*

| Behavior | Special Education | Self-Contained *n/n1*(*n*) | % | Departmentalized *n/n1*(*n*) | % | Total *n/n1*(*n*) | % |
|---|---|---|---|---|---|---|---|
| Discipline I (minor) | | | | | | | |
| | Yes | 10/4 (27) | 27.8 | 26/6 (28) | 72.2 | 36/10 (55) | 100. |
| | No | 9/4 (99) | 25.0 | 27/18 (104) | 75.0 | 36/21 (203) | 100. |
| Discipline II (minor – moderate) | | | | | | | |
| | Yes | 3/3 (27) | 38.0 | 5/4 (28) | 62.0 | 8/7 (55) | 100. |
| | No | 7/7 (99) | 36.8 | 12/8 (104) | 63.2 | 19/15 (203) | 100. |
| Discipline III (moderate – severe) | | | | | | | |
| | Yes | 7/4 (27) | 77.8 | 2/2 (28) | 22.2 | 9/6 (55) | 100. |
| | No | 3/3 (99) | 42.9 | 4/4 (104) | 57.1 | 7/7 (203) | 100. |

*n/n1* = Number of infractions/number of students committing infractions
% = percentages of infractions. Self-contained *N*=126 Departmentalized *N*=132

## TEACHERS' PERCEPTIONS REGARDING INSTRUCTIONAL DELIVERY SYSTEMS

Perceptions held by the teachers responsible for the instructional delivery systems were measured by an end-of-the-year survey completed in school year 2018-19. This survey addressed the following: first year experience transitioning from a self-contained instructional delivery system to a departmentalized instructional delivery system; confidence related to providing mathematics instruction; confidence in providing English language arts instruction; student social and emotional fulfillment in the departmentalized instructional delivery system; collaboration to building student/teacher relationships; overall workload; tools used in the academic planning cycle; personal educational philosophy; the upcoming school year; teacher preference regarding self-contained or departmentalized instructional delivery systems; student

achievement and the instructional delivery system; negative and positive aspects associated with departmentalization; and, administrative support. A copy of the survey is included as Appendix C.

Participating teachers were asked to provide an overall evaluation of their first year experience teaching in a departmentalized setting. The response scale ranged from a score of 1 (*worst experience of my career*) to a high of 10 (*best experience of my career*). The mean score was 3.83 ($N = 6$) with responses ranging from a score of 1 to a high of 10. Teachers were also asked if they felt a departmentalized setting was the best fit for the social and emotional well-being of fifth grade students. The response scale ranged from 1 (*a departmental setting in fifth grade is not the best fit for students' social and emotional needs*) to a high of 10 (*a departmental setting in the fifth grade fully meets the students' social and emotional needs*). Six teachers responded to the question resulting in a mean score of 3.17. The scores ranged from a low of 1 to a high of 8.

Participating teachers were asked to provide an overall evaluation of their confidence level in providing fifth-grade English language arts. The response scale ranged from a score of 1 (*I am NOT at all confident in my ability to teach 5$^{th}$ grade ELA*) to a high of 10 (*I am VERY confident in my ability to teach 5$^{th}$ grade ELA*). The mean score was 7.5 ($N = 6$) with responses ranging from a score of 8 to a high of 10. Teachers were also asked to provide an evaluation of their ability to teach fifth-grade mathematics. The response scale ranged from a score of 1 (*I am NOT at all confident in my ability to teach 5$^{th}$ grade mathematics*) to a high of 10 (*I am VERY confident in my ability to teach 5$^{th}$ grade mathematics*). The mean score was 8.5 ($N = 6$) with responses ranging from a score of 3 to a high of 10.

Teachers were asked whether, *sharing students with team members has* 1 (*created a breakdown in the teacher student relationship*) to 10 (*allowed for a better understanding of the whole child*). Six teachers responded to the question, and the mean score was 2.33. Responses ranged from 1 to a high of 5. Participating teachers were also asked to assess the extent to which their educational philosophy affected their acceptance of a departmentalized instructional delivery system in fifth-grade. The response scale ranged from 1(*not at all*) to 10 (*number one factor*). Six teachers responded and the mean score was 6.67. Scores ranged from a low of 2 to a high of 10.

Participants were also asked to evaluate their use of academic progress data in the planning cycle. The response scale ranged from a score of 1 (*not at all*) to 10 (*number one factor*). The mean score was 8.0 ($N = 6$) with responses ranging from a low of 6 to a high of 10. Participants were also asked to evaluate the extent to which academic data were used to develop instruction. The response scale ranged from a score of 1 (*data were not considered*) to 10 (*all decisions were related to data*). Six teachers responded resulting in a mean score of 7.33. Responses ranged from a low of 5 to a high of 10. Teachers were also asked to rate their overall workload. The response scale ranged from a score of 1 (*has decreased immensely*) to 10 (*has become overwhelming*). The mean score was 6.17 ($N = 6$) with responses ranging from a low of 1 to a high of 10.

Participating teachers were asked to assess their perceptions about teaching the following school year in a departmentalized setting. Six teachers responded to the multiple-choice format question (*strongly disagree, disagree, neutral, agree, and strongly agree*). Three teachers selected the agree option, one teacher selected the neutral option, one teacher selected the disagree option, and one teacher selected the strongly disagree option. Teachers were also asked

to evaluate their teaching preferences. The response scale used a multiple choice format (i.e., *a self-contained setting, a departmental setting, I see the benefits of both, and a hybrid option may be the better approach*), and six teachers responded. Two teachers preferred a hybrid instructional delivery system, two teachers preferred a hybrid option, and two teachers preferred the self-contained instructional delivery system.

Teachers were also asked to assert their perceptions regarding student achievement and instructional delivery models. Six teachers responded to the multiple choice question (*keep the current model in place, attempt a different model (*i.e.*, a hybrid model), keep the current model, but reevaluate those teaching assigned subjects, and reestablish the traditional elementary self-contained model*). Three teachers responded attempt a different model (i.e., a hybrid model), one teacher opted to keep the current model, but reevaluate teaching assignments, and two teachers chose a preferred for reestablishing the traditional self-contained setting. Teachers' responses cited class size, behavior problems, not really knowing the kids, their students, lack of adherence to the schedule, coworker negativity, the lack of a variety in technology, and the chaos associated with change as reasons they were not pleased with changing to departmentalized instructional settings.

Teachers participating in the study were given the opportunity to articulate what they felt were the most positive aspects of teaching in a departmentalized setting (i.e., *for me, the most positive aspect of departmentalization has been:*). Teacher responses included N/A, trying to find a positive..., getting to know all students, alleviation of multi-subject planning, creating responsibility for the 5th graders, and less academic content responsibility.

Teachers were also asked to articulate their perceptions on what could have ensured a better transition (i.e., *during the transition the administration should have done the following to*

*ensure a better transition*☺. Teacher responses included considering the teachers opinion, feeling overwhelmed, partnering with another teacher, and easing into a departmentalized model.

Finally, a section was provided for additional comments. Teacher responses observed departmentalization would be a better fit if social studies and science teachers could teach both subjects and two three-person teams established, interest in teaching two subjects and having teacher teams, and reconsidering teaching assignments.

**Summary**

Study subjects were 258 fifth grade students from a single middle school in central Appalachia. Subjects were divided into two groups (i.e., self-contained and departmentalized instructional delivery systems) across the 2017-18 ($n$ = 126) and 2018-19 ($n$ = 132) academic years. One hundred and twenty-six (46.8 %) of the subjects were male, 255 (98.5%) were White, and 55 (21.1%) received special education services.

There were no significant differences in student performance based on instructional delivery system for overall math or any math subtest. Females in the self-contained instructional delivery system performed significantly higher than males on operations and algebraic thinking. There were no significant differences in student performance based on instructional delivery system for overall English language arts or any subtest. Female students in self-contained settings again scored significantly higher than males on overall ELA, reading literacy, and writing and language. There were no significant differences in student performance in mathematics and English language arts based on instructional delivery system and the receipt of special education services.

Students in a departmentalized instructional delivery system had a higher incidence of Discipline I and II incidents requiring administrative intervention than those receiving instruction

using a self-contained system. Students receiving instruction in a departmentalized instructional delivery system also had higher incidents of Discipline III incidents than those receiving instruction in a self-contained setting. In both instructional delivery systems, females had fewer Discipline I and II incidents requiring administrative intervention than males; however, females experienced more Discipline I and II incidents in the departmentalized setting. Males had fewer Discipline III infractions than females in departmentalized settings compared to males in self-contained settings. Females had no Discipline III incidents in either setting.

Students receiving special education services in self-contained settings had more Discipline I and III incidents than those not receiving special education services in the same settings. Students receiving special education services in self-contained settings had fewer Discipline II incidents compared to students not receiving special education services in the same setting. Students receiving special education services in departmentalized settings had fewer Discipline I, II, and III incidents compared to students not receiving special education services in the same setting. Overall, students receiving special education services in departmentalized settings had more incidents of Discipline I and II infractions compared to students receiving special education services in self-contained settings; however, students receiving special education services in departmentalized settings had fewer Discipline III incidents compared to students not receiving special education services in the same setting.

Teachers' perceptions regarding teaching in a self-contained versus departmentalized instructional delivery system were compared using an end of the year survey. Survey results indicate a consensus was not reached in the following categories: first year experience changing from a self-contained to a departmentalized instructional delivery system, perception regarding workload, educational philosophy, and teacher preference. Confidence related to providing

mathematics and English language arts instruction at the fifth-grade level was relatively high among the teachers surveyed.

# CHAPTER 5

# CONCLUSIONS AND RECOMMENDATIONS

Chapter Five presents the conclusions and recommendations associated with this case study. Chapter elements include sections on problem statements, research questions, methods, summary of findings, conclusions, discussion and implications, and recommendations for further research.

## PROBLEM STATEMENT

Historically, elementary education has relied primarily on a self-contained organizational model for instructional delivery; however, other models, including departmentalization, have been evaluated. Students will sometimes perform better academically in a departmental setting while measures of school culture are higher in a self-contained setting; however, student discipline incidents appear to lessen in a self-contained setting (Hood, 2014; Lounsbury, 1988; Taylor-Buckner, 2014; Williams, 2009; Yearwood, 2011). There is an insufficient amount of research focusing on the use of departmentalization at the elementary level, particularly in those grades adjacent to the middle school grades. Concurrently, state test scores in ELA and mathematics were below expectations in the case study school. Therefore, this study investigated the differences in achievement and behavior for fifth-grade students taught using a self-contained instructional model compared to students taught using a departmentalized model. Differences based on selected demographic/attribute variables were also investigated. Teacher perceptions regarding the differences in the two organizational models were also examined.

### Research Questions

The following specific questions guided the study:

1. What are the differences, if any, in fifth-grade students' mathematics achievement in self-contained versus departmentalized instructional delivery systems?
2. What are the differences, if any, in fifth-grade students' English language arts achievement in self-contained versus departmentalized instructional delivery systems?
3. What are the differences, if any, based on selected fifth-grade students' demographic/attribute variables, in mathematics achievement in self-contained versus departmental instructional delivery systems?
4. What are the differences, if any, based on selected fifth-grade students' demographic/attribute variables, in English language arts achievement in self-contained versus departmentalized instructional delivery systems?
5. What are the differences, if any, in students' behavioral issues requiring administrative interventions in self-contained versus departmentalized instructional delivery system?
6. What are the differences, if any, based on selected fifth-grade students' demographic/attribute variables, in student behavioral issues requiring administrative interventions in self-contained versus departmentalized instructional delivery systems?
7. What are the fifth-grade teachers' perceptions regarding teaching in a self-contained versus departmentalized instructional delivery system?

**Subjects**

This case study used data from two sources: summative assessment data from the West Virginia Department of Education (WVDE) and individual teacher survey data. Study subjects were 258 fifth grade students from a single middle school in central Appalachia. Subjects were divided into two groups (self-contained and departmentalized instructional delivery systems) across the 2017-18 ($n$ = 126) and 2018-19 ($n$ = 132) academic years. One hundred and twenty-

six (46.8 %) of the subjects were male, 255 (98.5%) were White, and 55 (21.1%) received special education services. The two groups were substantially equivalent in terms of these attributes.

**Methods**

Each year West Virginia school children in grades three through eight are required to take the West Virginia General Summative Assessment. This summative assessment is designed to measure student performance in English language arts and mathematics (WVDE, 2019a). Student scores were collected from the WVDE online reporting system. Only scores from students that participated in a full academic year will be considered.

Surveys (Appendix C) were distributed to the participating teachers at the end of the 2018-2019 school year. The purpose of these surveys was to gain an understanding of the teachers' first-year perceptions and attitudes toward departmentalization. This survey addressed the following aspects of departmentalization: a) first experience; b) comfortability with mathematics instruction; c) comfort with English language arts instruction; d) attitude toward a departmentalized setting in fifth grade; e) amount of collaboration, communication, and teaming compared to a self-contained setting; f) workload; g) data-driven instruction; h) assessment intervention usage (i.e., formative and interim); i) personal educational philosophies; and k) a general attitude toward their transition from self-containment to a departmental setting.

Disciplinary data were collected for the West Virginia Department of Education's reporting system on students in both self-contained and departmentalized delivery systems. Disciplinary infractions were defined as events in which administrator intervention was required in any attempt to correct unwanted behaviors. Disciplinary infractions were categorized as follows: a) Discipline I – Minor disciplinary infractions that most commonly related to classroom

disruptions and immature behavior; b) Discipline II – Minor to moderate disciplinary infractions that most commonly relate to classroom disruptions, hallway disruptions, and physical altercation; c) Discipline III – Moderate to severe disciplinary infractions that most closely relate to safe school violations, drug activity, violent acts, and minor weapons; d) Discipline IV – Acts committed that violate legal statutes.

**Summary of the Findings**

Study subjects were 258 fifth grade students from a single middle school in central Appalachia. Subjects were divided into two groups (self-contained and departmentalized instructional delivery systems) across the 2017-18 ($n$ = 126) and 2018-19 ($n$ = 132) academic years. One hundred and twenty-six (46.8 %) of the subjects were male, 255 (98.5%) were White, and 55 (21.1%) received special education services. The two groups were substantially equivalent in terms of these attributes.

Independent sample *t*-tests results indicated no significant differences in student performance based on instructional delivery system for overall math or any math subtest. Similarly, females in the self-contained instructional delivery system performed significantly higher than those in departmentalized settings on operations and algebraic thinking. There were no significant differences in student performance in mathematics based on instructional delivery system and the receipt of special education services.

Independent sample *t*-tests results indicated no significant differences in student performance based on instructional delivery system for overall English language arts or any subtest. Female students in self-contained settings scored significantly higher in departmentalized settings on overall ELA, reading literacy, and writing and language. There

were no significant differences in student performance in English language arts based on instructional delivery systems and receipt of special education services.

Students receiving instruction in a departmentalized instructional delivery system had a higher incidence of Discipline I incidents requiring administrative intervention than those receiving instruction using a self-contained system. Similarly, students receiving instruction in a departmentalized instructional delivery system had higher incidents of Discipline II and III requiring administrative intervention than those receiving instruction in a self-contained setting.

In both instructional delivery systems, females had fewer Discipline I and II incidents requiring administrative intervention than males; however, females experienced more Discipline I and II issues requiring administrative interventions in the departmentalized setting. Males had fewer Discipline III infractions in departmentalized settings compared to males in self-contained settings, whereas females had fewer Discipline III incidents in either setting.

Students receiving special education services in self-contained settings had more incidents of Discipline I and III requiring administrative intervention than those not receiving special education services in the same settings. Students receiving special education services in self-contained settings had fewer Discipline II incidents compared to students not receiving special education services in the same setting. Students receiving special education services in departmentalized settings had fewer Discipline I, II, and III incidents requiring administrative intervention compared to students not receiving special education services in the same setting. Overall, students receiving special education services in departmentalized settings had more incidents of Discipline I and II compared to students receiving special education services in self-contained settings; however, students receiving special education services in departmentalized settings had fewer incidents of Discipline III.

Teachers' perceptions regarding teaching in a self-contained versus departmentalized instructional delivery system were compared using an end-of-the-year survey. Survey results indicate that a consensus was not reached in the following categories: first year experience changing from a self-contained to a departmentalized instructional delivery system, perception regarding workload, educational philosophy, and teacher preference. Confidence related to providing mathematics and English language arts instruction at the fifth-grade level was relatively high among the teachers surveyed.

**Conclusions**

The data collected in this study were sufficient to support the following conclusions:

**What are the differences, if any, in fifth-grade students' mathematics achievement in self-contained versus departmentalized instructional delivery systems?** There were no statistically significant differences in student achievement in math for the students who were taught in a self-contained versus departmentalized instructional delivery system. This finding was true for overall and all sub-category math scores.

**What are the differences, if any, in fifth-grade students' English language arts achievement in self-contained versus departmentalized instructional delivery systems?** There were no statistically significant differences in student achievement in English language arts for the students who were taught in a self-contained or departmentalized instructional delivery system. This finding was true for both the overall and all sub-category scores.

**What are the differences, if any, based on selected fifth-grade students' demographic/attribute (i.e., sex and receipt of special education services) variables, in mathematics achievement in self-contained versus departmental instructional delivery systems?** Females' scores were significantly higher than male scores when compared on

operations and algebraic thinking in self-contained settings. There were no other statistically significant differences in student achievement based on sex in mathematics for the students who were taught in a self-contained or departmentalized instructional delivery system. There were no statistical significant differences in mathematics performance for students receiving special education services based on instructional delivery system.

**What are the differences, if any, based on selected fifth-grade students' demographic/attribute (i.e., sex and special education services) variables, in English language arts achievement in self-contained versus departmentalized instructional delivery systems?** Females performed significantly higher than males on overall English language arts, reading literary text, and writing and language in a self-contained setting. There were no statistically significant differences in English language arts performance based on receipt of special education services and instructional delivery system.

**What are the differences, if any, in students' behavioral issues requiring administrative interventions in self-contained versus departmentalized instructional delivery system?** Disciplinary I and Disciplinary II infractions among students receiving instruction in the departmentalized setting were greater when compared to students receiving instruction in the self-contained setting. Disciplinary III infractions were greater for students receiving instruction in the self-contained setting compared to students receiving instruction in the departmentalized setting.

**What are the differences, if any, based on selected fifth-grade students' demographic/attribute (i.e., sex and special education services) variables, in student behavioral issues requiring administrative interventions in self-contained versus departmentalized instructional delivery systems?** Overall, Discipline I and II infractions were

more frequent in departmentalized than self-contained settings. Discipline III incidents were more frequent in the self-contained setting. Male and female students committed more Discipline I and II infractions in departmentalized than self-contained settings. Students receiving special education services committed more frequent Discipline I and II infractions in the departmentalized than self-contained setting.

**What are the fifth-grade teachers' perceptions regarding teaching in a self-contained versus departmentalized instructional delivery system?** Survey results indicate a consensus was not reached in the following categories: first year experience changing from a self-contained to a departmentalized instructional delivery system, perception regarding workload, educational philosophy, and teacher preference. Confidence related to providing mathematics and English language arts instruction at the fifth-grade level was relatively high among the teachers surveyed.

**Discussion and Implications**

Independent samples *t*-test indicated there were no statistically significant differences in student achievement in math and English language arts for the students who were taught in a self-contained versus departmentalized instructional delivery system. This finding was true for students for overall and all sub-category math scores. These findings support Taylor-Buckner's (2014) assertion mathematical achievement may be influenced more by the teacher's ability to provide instruction and less to do with the instructional model.

Earlier, Hood (2010) argued teachers teaching in self-contained settings may only be generalists in academic content, but even as generalists they could still provide meaningful instruction that produces high achievement levels. Considering the teachers in this study were generalists in the years leading up to teaching in a departmentalized setting, and statically student

achievement remained the same, Hood's argument may have validity and warrant further consideration. Williams (2009), found no significant difference in core (i.e., mathematics, English language arts, social studies, and science) achievement between students taught in self-contained settings when compared to those taught in a departmentalized setting.

Regardless of instructional model it may be a better approach to ensure teachers are properly prepared to provide instruction. According to Williams (2009), many teachers do not feel their initial college training prepared them to teach all core subjects. If teachers are not prepared upon entering a teaching assignment, the responsibility for ensuring sound academic teaching falls on the school's principal. Carefully selecting teaching assignments when transitioning to a departmentalized setting may produce an increase in student achievement. Liu (2011) asserted teachers teaching content in which they are interested may spark more enthusiasm. If teachers are more enthusiastic about their role as an educator the amount of effort they put into student achievement is likely to increase.

Given the confusion in transiting from one instructional model to another, and the introduction of students entering middle school, it would be safe to assume that all the ingredients were present for a decrease in student achievement, but instead an independent *t*-test indicated a statistically level playing field. Sydney (2011) suggested strong leadership is key when making complex decisions affecting instructional delivery systems and teaching assignments.

In the end, if teachers are carefully selected and time is taken to consider all factors that could have an impact on student achievement it is plausible that incorporating a departmentalized instructional model could produce an increase in student achievement, or at a minimum produce statistically equal results. In either situation it is the responsibility of the

school or district's leadership to consider all factors and deliver a system that best fits their school or district.

Females' scores were significantly higher when compared to males on operations and algebraic thinking in self-contained settings. There were no other statistically significant differences based on sex in student achievement in mathematics for the students who were taught in a self-contained or departmentalized instructional delivery system. Although not statistically significant, male students receiving instruction in the departmentalized setting had slightly higher achievement in six of the six mathematics categories, whereas females had slightly lower scores in three of the six categories. If only considering male students these findings would support Yearwood's (2011) argument that student achievement could increase in departmental settings; however, the question of why males did better in a departmentalized setting compared to females is still a separate matter of inquiry.

There were no statistically significant differences in mathematics performance based on receipt of special education services based on instructional delivery systems. It is important to note students receiving special education services followed a type of departmentalized instructional model in the previous years, meaning they received services in a separate setting, and these services are provided by a specialized teacher.

Females performed significantly higher than males on overall English language arts, reading literary text, and writing and language in a self-contained setting. Female students had higher English language arts achievement scores than males in both instructional delivery systems, and Independent *t*-tests indicated female students' scores were statistically higher in overall English language arts, reading literary text, and writing and language in self-contained

settings compared to female students in departmentalized settings. Although not significant, male students experienced slight growth in overall English language arts, reading informational text, and writing and language in the departmentalized instructional delivery system. This peculiar phenomenon was also observed when analyzing results related to mathematics achievement and the two instructional delivery systems, and once again Yearwood's (2011) assertion that departmentalization can produce an increase in student achievement is supported. There were no statistically significant differences in English language arts performance based on receipt of special education services based on instructional delivery systems.

A particular point of interest in this study was male achievement versus female achievement. It is not uncommon for female students to have higher achievement levels – especially at the secondary educational level (Jackman, Morrain-Webb &Fuller, 2019). What deserves more attention may be the differences in male academic achievement in the departmentalized instructional setting. Jackman et al. (2019), asserts many reasons can contribute to females outperforming males. Among the reasons given was the need for male students to have more movement and their inability to sit still for prolonged periods of time. A departmentalized instructional delivery system used in this study did provide more movement, and may have allowed for a needed break in time for the male students.

Male students had higher behavioral incident levels requiring administrative intervention in both the self-contained and departmentalized instructional delivery systems, but the number of incidents were higher for the male students receiving instruction in the departmentalized instructional delivery system. Female students experienced similar increases in the number of

incidents requiring administrative intervention, but had lower incidents compared to male students in both instructional settings.

Two additional aspects of student behavior deserve further discussion. First, male students had fewer Discipline III incidents in the departmentalized setting as compared to students in self-contained settings and females had no Discipline III incidents in departmentalized settings. Second, females experienced an increase in moderate infraction only in the departmentalized setting. There are many factors that can influence student behavior, and even more that require administrative assistance. Fink (2017), argues when teachers lose social and emotional connections, behaviors and transitions can be more difficult to manage. It is fair to consider the frustration change can cause for teachers and the students. Frustration could be a factor in teachers choosing to seek administrative assistance instead of informally handling the disciplinary infraction themselves. If teachers feel overwhelmed, overworked, and frustrated it may be a source of relief to seek administrative support to handle incidents previously addressed within the classroom setting.

It is plausible the overall increase in disciplinary incidents can be partly explained by the nature of the departmentalized setting, teacher frustration, and student maturity levels. In previous years the students in the self-contained setting experienced less movement, less peer-to-peer interaction, and were limited to fewer teachers. According to Minott (2016), departmentalized instructional delivery systems are more complex by nature, and may allow for more interaction and an enriched learning experience, but it may be equally fair to assume complexity, movement, and new interactions could allow more opportunities for misbehavior from students and an increase in frustration from the teachers as well.

Many of the teachers surveyed expressed their frustration, and indicated they were not entirely prepared to shift from a self-contained to a departmentalized instructional model. Earlier it was documented that scholars underscored teacher workload, burnout, and content preference could have an impact on social and emotional development (Fink 2017; Strohl, Schmertzing, et al., 2014). Many of the minor disciplinary infractions were committed in a single classroom, and the teacher could informally address the situation. The combination of the new experience for the teachers and the students could have created an environment in which the teachers felt they needed administrative support to address even minor disciplinary infractions. Previously, what the teachers may have considered a minor infraction that required an informal resolution could have been compounded by their personal stress levels associated with making a transition from one educational delivery system to another. In the past, however, scholars have advised that students experience fewer disciplinary infractions in a self-contained setting (Lounsbury, 1988).

**Administration Implications**

The increase in disciplinary infractions should not be laid entirely at the feet of the teachers and the students. According to Yearwood (2011), strong leadership may have a lasting effect on overall success when making a transition from one setting to another. Instead of assuming the teachers would collaborate and work as a team to develop common and effective interventions to handle disciplinary needs, it may have been a better practice to work with them to develop a plan beforehand.

Survey results indicate a consensus was not reached in the following categories: first year experience changing from a self-contained to a departmentalized instructional delivery system, and perception regarding workload, educational philosophy, and teacher preference. Confidence

related to providing mathematics and English language arts instruction at the fifth-grade level was relatively high among the teachers surveyed.

When considering the perceptions regarding teaching in the self-contained versus the departmentalized instructional delivery system it is important to highlight a few key points. First, half the teaching staff was dissatisfied, but for different reasons. As has been observed, it has been argued that a teacher's willingness to accept change, and maintain a positive attitude can have a lasting effect on student success (Minott, 2016). According to the teacher survey used in this study, some teachers felt their workload had increased, and others felt they had been shortchanged by asking to teach an elementary grade in a middle school setting after being promised certain resources. At first glance, it may be reasonable to assume that teaching one subject compared to several would allow for a decrease in workload and a decrease in stress levels; however, survey results suggest that several teachers experienced an increase in their workload and stress levels. These assertions are similar to what Hood, (2010) highlighted.

The portion of the teachers who felt their workload had increased is only part of the equation. As reported in the teacher survey portion of this study, some teachers experienced a lighter workload. Other scholars have reported similar findings along with additional benefits of longer planning and more frequent student interaction (Gojak 2013; Strohl, et al., n.d.).

Two of the teachers rejected the idea of departmentalized instructional delivery and asserted they would recommend transitioning back to a self-contained setting regardless of student achievement. A teacher, or anyone, who has committed their career to doing a task a certain way for years may reject change – especially if they feel their needs are not being met, or their input was not considered. Also, the teacher could have a personal educational philosophy that rejects the idea of a departmentalized instructional delivery system at a young age. Either,

or both, of these situations are reasonable considerations, and if the choice is made to undertake a change in the educational delivery system it would be wise for the leadership to consider these factors and all others that have the potential to affect student learning (Sydney, 2011).

A majority of the teachers surveyed in this study indicated they either see the benefit in both types of instructional delivery systems, or they see benefit in establishing a hybrid type of instructional delivery system. This belief may indicate the majority of the teaching staff may be willing to put their differences aside and work collaboratively to help ensure student success if their perceptions and ideas are considered. This approach echoes Yearwood's (2011) study that alludes to strong leadership, organization, collaboration, and proper teaching assignments leading to a more successful transition. Williams's (2009) assertion that teachers' perceptions and feelings are often overlooked when decisions are being made could also be a factor.

In the end, this experiment may have experienced better results if a few changes had been made earlier. First, the leadership of the school should have ensured that the teachers involved had higher levels of confidence – not only in academic delivery, but in student transitions and additional movement. Williams (2009) and Taylor-Buckner (2014) argue a prepared teacher is a more confident teacher, and a prepared confident teacher will provide adequate instruction regardless of the delivery system. Selecting the proper teachers could be accomplished by collecting data and using them to make informed decisions. School principals could ask the teachers to complete surveys that assess their confidence levels in providing identified content. Next, survey responses could be compared to summative assessment scores. This approach may indicate not only the teachers' confidence levels, but their ability to produce results that indicate student achievement at high levels. If there is a conflict between the teachers' confidence level and their students' summative assessment scores it would be wise for

the leadership to discuss this divide with the teacher. If the teacher indicates they have a low level of confidence, but their students have high achieving scores, it could provide an opportunity for the administrative leadership to provide feedback to the teacher and increase their comfort in providing specialized instruction. The same can be done for teachers that report high confidence levels, but their students report low achievement scores. In either case, the school's leadership would be taking steps to more adequately prepare teachers for their teaching assignments.

Teacher teaching assignment is only one dimension of a multi-dimensional apparatus that requires strong leadership. Establishing the proper transitional procedures may also aid in the transitioning from one instructional delivery system to another. Working with the teachers to ensure they are prepared for the increase in student movement, an increase in student responsibility, and sharing students with other teachers, may decrease the level of teacher and student frustration, and result in a possible decrease in student disciplinary infractions requiring administrative intervention. If teachers are more prepared to deal with the changes and challenges associated with transitioning from self-contained to a departmentalized instructional delivery system they may experience lower stress levels and be better prepared to address students' social and emotional needs. Lower teacher frustration levels may equate to lower incidents in which they seek administrative assistance. Accomplishing working procedures could be accomplished the same way as selecting the proper teachers for teaching assignments – through strong leadership, proper planning, and listening to teacher perceptions before making a transition.

The results of this study should not be generalized for all fifth-grade learners, and the unique needs of the learners in this study may not be the type of learner needs in different

settings. Each state, school system, and school is unique, and it is a best practice to develop custom fitting approaches to educational delivery in order to meet the needs of each school site; however, aspects of this study may prove useful in similar situations, and when planning a change to longstanding educational practices.

**Recommendations for Further Research**

In order to fully understand the intricate requirements of providing an education through a departmentalized instructional delivery system further research may be needed in the following areas: administrative leadership; male versus female learning in a departmentalized educational delivery system; strength of the teacher providing instruction; and educational delivery system transitional programs.

Reed (2002) concluded a study with several recommendations. These included the effect and availability of staff development, academic achievement and the educational setting, and the effectiveness of teacher teams. This study concluded with similar advice, but additional recommendations. Although the overshadowing theme of this study was student academic achievement, it was other areas that generated further consideration.

The sharp rise in disciplinary infractions requiring administrative interventions was unsettling, but not just for the sharp increase. Compared to females, males had higher incidents of infractions requiring administrative interventions, and it is a fact of life that social, psychological, and developmental factors can influence behavior, but in what ways could teachers and administrators be better prepared to meet the social and emotional needs of male students?

Finally, this study allowed a look into the process of departmentalization of the grade-level (i.e., fifth-grade) most commonly preceding middle-school, and the effect it had on the

achievement and behavior of those studied. Future researchers may find the following recommendations useful in their academic pursuits.

1. Results indicated no statistical differences existed between overall mathematics and English language arts achievement between the two instructional delivery systems; however, there were statistically significant differences between males and females in sub-sections of mathematics and English language arts. Future scholars may wish to inquire why females have higher academic achievement levels than males.
2. Results indicated an increase in disciplinary infractions between both male and female students in departmentalized settings. Future researchers may investigate factors that led to an increase in disciplinary incidents.
3. Results indicated an increase in disciplinary infractions between male and female students in departmentalized settings, but males had higher disciplinary incidents in both settings when compared to females. Future researchers may choose to inquire about social, emotional, and cognitive factors that lead to males having a higher number of disciplinary incidents compared to females.
4. Surveys indicated mixed teacher perceptions regarding transitioning from self-contained to departmentalized settings. Further research may be required to better understand the role of school and district leadership in better preparing teachers for change associated with different instructional models.
5. This study is limited to a school in a semi-rural setting, and a majority of the students and parents share similar cultural backgrounds. Future researchers may choose to select a larger or more diverse sample to study.

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# APPENDIX A: STUDY AND RESEACH APPROVAL

MARSHALL UNIVERSITY
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**Office of Research Integrity**
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704

IRB1 #00002205
IRB2 #00003206

December 11, 2019

Ronald Childress
Leadership Studies

RE: IRBNet ID# 1525487-1
**At:** Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Childress:

| | | |
|---|---|---|
| **Protocol Title:** | [1525487-1] SELF-CONTAINED AND DEPARTMENTAL EDUCATIONAL DELIVERY SYSTEMS: A STUDY IN STUDENT ACHIEVEMENT | |
| **Site Location:** | MU | |
| **Submission Type:** | New Project | APPROVED |
| **Review Type:** | Expedited Review | |

In accordance with 45CFR46.110(a)(7), the above study was granted Expedited approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Chair. An annual update will be required on December 11, 2020 for administrative review and approval. The update must include the Annual Update Form and current educational certificates for all investigators involved in the study. All amendments must be submitted for approval by the IRB Chair prior to implementation and a closure request is required upon completion of the study.

This study is for student Robert Eugene Smith.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Anna Robinson at (304) 696-2477 or robinsonn1@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,

## APPENDIX B: DATA ELEMENTS: CODING SHEET

| Label | Description |
|---|---|
| Instructional Delivery System | 1=Self-contained<br>2=Departmentalized |
| Special Education Services | 1=Receives<br>2=Does not receive |
| Gender | 1=Female<br>2=Male |
| Ethnicity | 1=White<br>2=Other |
| ELA Scale Score | The calculated score reflecting a students' overall ELA proficiency on the West Virginia General Summative Assessment. The calculation is derived from the Lexile score, reading literary text, reading informational text and writing and language. |
| Mathematic Scale Score | The calculated score from The West Virginia General Summative Assessment to assess the student's overall mathematics proficiency. |
| ELA Reported Lexile® Measure | A score from The West Virginia General Summative Assessment used by the West Virginia Department of Education to measure a student's reading level. |
| Reading Literary Text Reporting Category Scale Score | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to read literary text. |
| Reading Informational Text Reporting Category Scale Score | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to read informational text. |
| Writing and Language Reporting Category Scale Score | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability in writing and language. |
| Mathematics Reported Quantile® Measure | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability in mathematics. |

| | | |
|---|---|---|
| Operations and Algebraic Thinking Reporting Category Scale Score | | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand operations and algebraic thinking. |
| Number and Operations in Base Ten & Fractions Reporting Category Scale Score | | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand numbers and operations in base ten and fractions. |
| Measurement, Data and Geometry Reporting Category Scale Score | | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand measurement, data, and geometry. |
| Modeling and Problem Solving Reporting Category Scale Score | | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to understand modeling and problem solving. |
| Use Mathematical Reasoning Reporting Category Scale Score | | A score reported on The West Virginia General Summative Assessment used by The West Virginia Department of Education to assess the students' ability to use mathematical reasoning. |
| Discipline I | | Minor disciplinary infractions that are most commonly related to classroom disruptions and immature behavior as reported in the West Virginia Department of Education's Student Information System. |
| Discipline II | | Minor to moderate disciplinary infractions that most commonly relate to classroom disruptions, hallway disruptions, and physical altercation as reported in the West Virginia Department of Education's Student Information System. |
| Discipline III | | Moderate to severe disciplinary infractions that most closely relate to safe school violations, drug activity, violent acts, and minor weapons as reported in the West Virginia Department of Education's Student Information System. |

| | | |
|---|---|---|
| Discipline IV | [redacted] | Acts committed that violate statutes of law as reported in the West Virginia Department of Education's Student Information System. |

## APPENDIX C: TEACHER SURVEY

# 5th grade

1. **First Year Experience**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worst experience of my career. | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | Best experience of my career |

2. **Mathematics Instruction**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I am NOT at all confident in my ability to teach 5th grade mathematics. | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | I am VERY confident in my ability to teach 5th grade mathematics. |

3. **English Language Arts**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I am NOT at all confident in my ability to teach 5th grade ELA. | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | ⬭ | I am VERY confident in my ability to teach 5th grade ELA |

4. **Departmental Settings in Fifth-Grade:**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Is not the best fit for students' social and emotional needs. | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Fully meets the students' social and emotional needs. |

5. **Compared to Self-Inclusion, Sharing Students With Team Members Has:**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Created a breakdown in the teacher/student relationship | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Allowed for a better understanding of the whole child. |

6. **Since Departmentalization My Workload Has:**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Has decreased immensely | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Has become overwhelming |

7. **To what extent did academic data drive instruction and assessment?**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Data was not a consideration. | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | All decisions were related to data. |

8. **Benchmark Assessments, IMA, and CIA are tools we used during planning most often.**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Totally disagree | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Totally agree |

9. **To What Extent Does Your Educational Philosophy Have on Your Acceptance of a Departmental Setting for 5th Graders**
*Mark only one oval.*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Not at all | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Number on Factor |

10. **I am looking forward to the next school year**
*Mark only one oval.*

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly agree

11. **I prefer:**
*Mark only one oval.*

- ◯ A self-contained setting
- ◯ A departmental setting
- ◯ I see the benefit of both
- ◯ A hybrid option may be a better approach

12. **If Student Achievement Has Increased We Should:**
*Mark only one oval.*

- ◯ Keep the current model in place
- ◯ Attempt a different model (i.e., a hybrid model)
- ◯ Keep the current model, but reevaluate those teaching assigned subjects
- ◯ Reestablish the traditional elementary self-contained model.

13. **For me, the most negative aspect of departmentalization has been:**

_____

14. **For me, the most positive aspect of departmentalization has been:**

_____

15. **During this transition the administration should have done the following to ensure a better transition:**

16. **Additional Comments and Suggestions.**

## APPENDIX D: KANAWHA COUNTY SCHOOLS' APPOVAL LETTER FOR DATA

Kanawha
COUNTY SCHOOLS
Discover. Excel. Advance.

200 Elizabeth Street, Charleston, West Virginia 25311-2119 • (304) 348-7732 • Fax: (304) 348-7735
**Ronald Duerring, Ed. D, Superintendent**

November 7, 2019

Mr. Gene Smith
Principal
Sissonville Middle School
100 Old US Hwy 21
Charleston, WV 25312

Dear Gene,

I am pleased to inform you that your request to conduct research within Kanawha County Schools, for the project titled- "Self-contained and departmentalized instructional delivery systems: a study in student achievement", has been approved. You may proceed with implementation of the project within the parameters and timelines set forth in your request to collect data. Thank you for your application and I wish you much success with the completion of your doctoral program.

Sincerely,

Jon Duffy
Director of Counseling & Testing

## APPENDIX E: CURRICULUM VITAE

**Robert Smith**
99 Peachador Ln. Charleston WV 25320 | 304-951-1009 | robertsmith@mail.kana.k12.wv.us

**EDUCATION**

National University, San Diego Ca — 2014
M.A. Educational Leadership

Action Research:
"Rural Appalachian Poverty: Possible Strategies for Overcoming a Negative Situation and Improving Student Learning"

West Virginia State University, Institute W.V. — 2011
B.A. Secondary Education
Social Studies 5 – Adult

**TEACHING EXPERIENCE** — 2011
Riverside High School - Classroom Teacher
Special Education: Behavioral Disorder
Riverside High School – Classroom Teacher — 2012-2014
AP Government, AP US History: developed schoolwide syllabi
Riverside High School – Athletic Director
Collaborated with the principal to develop a strong athletic and character development program

**LEADERSHIP EXPERIENCE** — 2014-2017
Assistant Principal
Charged with carrying out the day-to-day operations of a secondary school.
Collaborated with the administrative team to shape school policy and increase graduation rates.
Maintained a safe work environment for staff and students alike
Principal: Sissonville Middle School — 2017 – Present

**RELATED EXPERIENCE** — 1996-2004
United States Marine Corps
Platoon Sergeant

Provided training to subordinate troops in various tactics and weapon systems