

Summer 2020

## Bifurcated Elementary Sister-Schools: Do They Affect Student Growth During Transition Years?

Victoria Gelbert

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BIFURCATED ELEMENTARY SISTER-SCHOOLS: DO THEY AFFECT STUDENT  
GROWTH DURING TRANSITION YEARS?

by

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Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Education in

Curriculum and Instruction

College of Education

University of South Carolina

2020

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## Dedication

This dissertation is dedicated to my family and co-workers who supported me on this journey. First, I would like to recognize my family who instilled the importance of hard work and dedication and who always believed in me and encouraged me. I would like to recognize my husband who took on many extra duties and roles as I worked to complete this study and the doctoral program. In addition, this is dedicated to my two young children who have made unknown sacrifices while assisting me to complete my degree. My hope is that they have seen that you can achieve your dreams with hard work and dedication and that they will be instilled with these values.

## Acknowledgments

I would like to acknowledge my advisor, Dr. Silvernail, who answered countless emails and questions from me during this journey. She was a great support and was always there to help me along the way. I would also like to thank the whole committee who agreed to serve on my dissertation committee. Lastly, I would like to acknowledge my previous division superintendent, Dr. Matthew Eberhardt, for always believing in me and mentoring me through my educational journeys. I would not be where I am today without his support and guidance.

## Abstract

The purpose of this study was to determine whether students who attend a sister-school modeled elementary school experience a negatively disproportionate amount of academic growth the year students transition from the primary school to the elementary school in third grade. This study looked at two different elementary grade span configurations, the traditional PreK–5 model and the 3–5 sister-school model, to determine if there is a difference between third grade student academic growth in different grade configurations. Four sample schools agreed to participate in the study and were paired based on their grade span configuration and demographics. The sample schools provided data from a nationally normed test, the Measure of Academic Progress (MAP) Test, in order to determine the most beneficial grade configuration.

The MAP Test data was collected, represented in data tables and bar graphs, and analyzed using two statistical analysis *t*-tests. The results revealed that there was not a statistically significant difference in the amount of student academic growth the year students transition to third grade between the two different grade-span configurations tested. The results of this study were used to create an implementation plan to assist schools who may experience a negatively disproportionate amount of academic growth the year their students transition to a 3–5 sister-school modeled elementary school, even though this study found that there should not be a significant difference the year after the students transition.

*Keywords:* grade span configuration, sister-schools, transitions, communities of practice, quantitative, action research, descriptive research

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## List of Abbreviations

CoP .....	Communities of Practice
MAP .....	Measures of Academic Progress
NWEA .....	Northwest Evaluation Association
PLC .....	Professional Learning Community
SOL .....	Standards of Learning

## Chapter 1: Introduction

In 2010, I started my teaching career at a small, rural elementary school that housed students grades 3–5. I was one of six fifth-grade teachers at the school. I loved teaching and really thrived in the classroom. Although I was a first-year teacher, my students received high scores on the state’s standardized test, Standards of Learning (SOLs), and I became teacher of the year for the whole school. After teaching there for a couple of years, I moved to the middle school to teach in the same county. Seven years after starting my career at the elementary level, I returned to the same elementary school as the assistant principal. As a previous teacher at the school and then the assistant principal, I continued to worry about our standardized test scores and student growth at the school.

The problem in practice is that unfortunately year after year, third grade students at that elementary school continually underachieve on the SOLs. In our state, students take their first SOL tests in third grade. Sadly, many of the students at that elementary school start their standardized testing career feeling defeated from the beginning. We attempted to teach and remediate those students to prepare them for the SOLs, but our efforts culminated in failure at the end of each year. We had not met state accreditation standards for three years and were struggling to find a reason. The current principal hypothesized that the third-grade scores were lower than our fourth and fifth grades scores because it is their first-year testing. While this was true, when comparing our third-grade scores to other third-grade scores in the state, our scores were among the

lowest. As a former teacher and a current administrator, I believed there is an alternative reason for the low third grade scores: the elementary sister-school model employed by the school district.

Currently in the United States, the most common elementary school grade span configuration consists of grades PreK–5 (NCES, 2018; Warthan, 2011). During the 2017-2018 school year, over 50% of the elementary schools in the nation were set up with the PreK–5 grade span configuration (NCES, 2018). Even though this grade span configuration is the most common in the country, over 40% of elementary schools have different grade span configurations than the traditional PreK–5. One of the nontraditional elementary grade span configurations consists of an elementary school that is separated into two schools, one primary (grades PreK–2) and one elementary (grades 3–5). This grade span configuration model is called a sister-school model (Virginia Department of Education, 2017). In the United States, 2.8% of elementary schools are configured with this grade span configuration (NCES, 2018).

The sister-school model creates an additional transition year for students as compared to the conventional elementary school grade configurations (PreK–5). A transition year occurs each year students change schools or “transition” from one school to the next due to completing all grades offered at the current school (Cullen & Robles-Pina, 2012). In a conventional school setting, students have two transition years: one when entering middle school from elementary and one when transitioning from middle to high school. However, students that attend these sister-schools have an additional transition year when transitioning to elementary school in third grade.

## Literature Review

Grade-configurations, grade spans, and transition years are all educational concepts that have been researched for many years (Clark, 2013; Combs et al., 2017; Cook et al., 2008; Cullen & Robles-Pina, 2012; Johnson, 2009; Rantin, 2017; Ryan et al., 2013; Wren, 2003). Cullen & Robles-Pina (2012) describe grade spans as “the number and range of grade levels that exist within an individual school” (p. 31). In general, studies on grade spans and transitions show a decrease in student academic achievement each year a transition occurs and that schools with larger grade-configurations are the most beneficial for students (Clark, 2013; Combs et al., 2017; Cook et al., 2008; Cullen & Robles-Pina, 2012; Johnson et al, 2009; Rantin, 2017; Ryan et al., 2013; Wren, 2003). However, many school systems, including the county where I worked, continue to configure their schools based on available space, conventional views, and economic feasibility rather than what is best for students based on research data.

Alspaugh (1998) found that there is significant achievement loss during transition years in reading, math, science, and social studies. This achievement loss occurred in each grade configuration he tested, whether the transition was in grade 5, 6, 7, or 8. He also found that “student achievement scores tended to recover to their pretransition levels in the following year after the transition” (Alspaugh, 1998, p. 20). Additionally, another study found that as the number of grades offered at the school increases, student achievement increases (Bickle et al., 2000). Clark (2013) found that grades 6-8 “students attending a K-8 schools had higher average reading scores than students attending a middle school” (p. 5). He found this to be true for both reading and math scores. Ryan et al. (2013) also found that students’ grade point averages and intrinsic value for



schoolwork declined when fifth graders transitioned to middle school in a 5–8 grade span (p. 1372).

Research has shown negative effects on student achievement during transition years between elementary to middle school and middle to high school. This dissertation examines the impact an additional transition year has on student academic growth on third grade students who attend sister-school elementary schools. The study attempts to determine if there is a transition year achievement loss that impacts students who attend non-conventional sister-schools that differs from students' academic growth in third grade at conventional PreK–5 schools. Additionally, if a difference is observed, the researcher attempts to offer ways to remedy these discrepancies during the transition year.

### **Theoretical Framework**

The theoretical framework of this study tracks that of prior research that studied the achievement levels and differences in fifth graders who attended elementary schools (PreK–5) versus fifth graders who attended intermediate schools (5–6). This framework includes two theoretical concepts: transitions and communities of practice (Combs et al., 2011, p. 9).

Transitioning occurs when a student moves or transfers from one school to another school. This can occur when students physically move to a new location and a new school or when students collectively move from one school to the next (i.e. middle to high school). Transitioning from school to school, no matter at what grade, affects students. An education study conducted by Wren (2003), which sampled 232 schools in an inner-city school system in the Midwest, concluded that “the more transitions a

student makes, the worse the student performs” (p. 10). Furthermore, Wren found that as the grade span of a school increases, student achievement increases. In a separate study, Alspaugh (1998) concluded that each time there is a transition year, there is a significant achievement loss despite the grade level at which the transition occurs.

The achievement losses found with each transition year could occur due to many factors. Coladarci et al. (2002) hypothesizes that these achievement dips occur due to students being in a new building, with a new schedule, unfamiliar teachers, a harder curriculum at a higher grade level, and a new cohort of students. Despite the reasons for these achievement losses, researchers have found a drop in achievement during every transition studied (Clark, 2013; Combs et al., 2017; Cullen & Robles-Pina, 2012; Johnson, 2009; Rantin, 2017; Ryan et al., 2013; Wren, 2003).

Communities of practice is another theoretical framework shaping this study and a possible explanation for the drop in academic achievement during transition years. “Communities of practice are groups of people who share a concern or passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2015, p. 1). A community of practice exists in the schools when teachers are collaborating on a regular basis and are vertically aligning curriculum. Enthoven & Bruijn (2010) believe a benefit of schools that have a strong community of practice is that the teachers share their knowledge with each other and share a common purpose. Additionally, schools that have a successful community of practice use similar vocabulary and familiar contexts with students (Cashman et al., 2007).

When elementary schools are bifurcated into two sister-schools, these two schools are not participating in the same community of practice. Each sister-school might have

successful and effective communities of practice between the teachers and administration using similar vocabulary and teaching strategies; however, in a bifurcated elementary school system the systems are not taking part in a unified community of practice. The teachers at the primary schools are not collaborating and aligning their curriculum with the teachers at the elementary school where statewide testing begins. Brouwer et al. (2012) believe the new reforms and state standards require coordination between teachers, ongoing collaboration, and a shared responsibility towards the best interests of our students (p. 347). They believe the communities of practice relationship needs to be ongoing and not an occasional meeting. The lack of communities of practice between the PreK–2 teachers and the 3–5 elementary teachers could be an additional reason students' achievement and levels of growth are lower for third-grade students who attend sister-schools compared to third-grade students who attend traditional PreK–5 elementary schools.

### **Purpose of Study**

The purpose of this study was to determine whether students in the county where I worked experience a disproportionate amount of academic growth the year they transition from the primary school to the elementary school. This study looked at two different elementary grade span configurations to determine if there is a difference between third grade student academic growth in different grade configurations or if the lack of achievement growth we noticed in our third-grade students is a normal phenomenon for all third-grade students regardless of grade configuration. I examined the amount of student growth based on the Measure of Academic Progress (MAP) Test, a nationally

normed test. I collected MAP Test data from all sample schools to analyze and correlate the data to determine the most beneficial grade configuration.

There were two grade configurations tested in this study: the more common PreK–5 elementary school and the less common sister-school model which consists of a PreK–2 primary school partnered with a 3–5 elementary school. The outcome of this study will help inform and stimulate action to ensure districts are using appropriate grade configurations to best benefit students. If there was a noted difference between the grade configurations and student growth in favor of conventional elementary schools, this data could have been cause for interventions to assist students before, during, and after their transition to decrease the effects of this transition year and improve the communities of practice between the two schools.

### **Research Question**

Since the school where I worked had not been accredited in over three years and only 2.8% of elementary schools nationally are set up with a sister-school model, I examined the difference in student growth between traditional PreK–5 schools and sister-school model schools with the goal of answering the following question:

What is the difference in student academic growth between a conventional (PreK–5) elementary school and the less common sister-school model which has 2 schools, one primary (PreK–2) and one elementary (3–5)?

### **Research Hypothesis**

Based on the data our third-grade students yielded on state-wide assessments, I expected to find that students in bifurcated sister-schools had less growth in third grade compared to students attending conventional elementary schools. I believed this could

have been due to the students adjusting to their new school during their transition year and a lack of communities of practice between the two schools.

## **Methodology**

Action research is “an inquiry conducted by educators in their own setting in order to advance their practice and improve their students’ learning” (Efron & Ravid, 2013, p. 2). This action research study analyzed student growth from the fall of third grade to the spring of third grade in two bifurcated elementary schools in comparison to two elementary schools with traditional PreK–5 grade configurations. This action research had a similar methodology to a study conducted by Combs, et al. (2011). In their study they used quantitative data (archived statewide) to compare different grade span configurations. I too looked at quantitative data to observe student growth between cohorts. However, Combs, et al. compared traditional PreK–5 elementary schools to PreK–6 and PreK–8 elementary schools. In this study, students’ growth was compared between traditional PreK–5 elementary schools and sister-school model elementary schools. The cohorts’ MAP Test scores were analyzed between the time students started third grade through the end of third grade to examine the growth in math. This study is a quantitative, descriptive research study. In descriptive research, the researcher “represents the current conditions of the topic under investigation without trying to change or manipulate them” (Efron & Ravid, 2013, p. 45).

For this study participating schools were chosen as a purposive sample. According to Efron & Ravid (2012), a purposive sample is a sample that is “chosen deliberately according to a predetermined purpose” (p. 62). Additionally, schools were invited to participate in the study based on a representative sample where “participants

are selected for possessing or exhibiting the range of characteristics or behaviors in connection to the issue under investigation” (Efron & Ravid, 2012, p. 62). Each bifurcated sister-school in the state was contacted to see if their students participate in MAP testing in third grade in the fall and spring. Of those schools, three were asked to participate in the study based on convenience to the researcher and location of the school. Traditional PreK–5 schools that had similar demographics or similar localities to the sister-schools were contacted to find out if they MAP test students and if they would be willing to participate in the study. All participating schools were formally invited with a letter of intent to conduct the study, along with information about the study and the purpose (See Appendix B for the Invitation Letter for School Participation). Additionally, participating schools were notified that their schools’ name and information will be kept in confidence and will not be disclosed in the results.

After four schools agreed to participate in the study, I collected two years of grade three MAP Test data and represented the current conditions in hopes of improving student academic growth to better benefit all students who currently attend bifurcated elementary schools.

***Instruments.*** I used the MAP Test to collect the quantitative data for the propose of this descriptive action research study. The MAP Tests are nationally normed, computer adaptive tests that measure what students know and show student growth from year to year in both reading and math (NWEA, 2018). This test is administered to students twice a year, once in the fall and once in the spring. The Northwestern Evaluation Association (NWEA), which creates and manages the MAP Test contends that “MAP Growth reveals how much growth has occurred between testing events and,

when combined with our norms, shows projected proficiency” (NWEA, 2018). This instrument was used to determine if there is a difference in student growth between grade configurations K–5 and 3–5.

The NWEA provided data from studies they have conducted to prove the MAP test’s reliability and validity. Through multiple tests in multiple states, they concluded that the MAP test is reliable. The reliability of the MAP test, when taken in state where the study is being conducted, is 0.814 (NWEA, 2018). The NWEA conducted a test-retest reliability study in which over 500 student scores were used to determine the reliability. Since this score is over 0.80, the MAP test can be considered a reliable test. Additionally, the NWEA conducted two types of validity tests: content validity and criterion validity. Again, each of these tests included over 500 samples of students’ scores. From these tests, the NWEA concluded their test is valid. Based on collecting and recording data from MAP tests and conducting a *t*-test of the means of student growth from many different schools, there are no foreseeable threats to the internal and external validity of this study.

**Design.** I contacted each sister-school in the state to determine if their students participate in MAP testing. Three of the sister-schools were invited to participate in the study as a purposive sample because they MAP test their third graders and are in localities near my home base. Three traditional PreK–5 elementary schools were then contacted and asked to participate to be paired with a sister-school based on similar demographics or similar localities as the sister-school. Six schools, three school pairs, were invited to participate in the event that a school stops MAP testing during the course of the study or that a school decided not to participate in the study. Each of the schools

that agreed to participate were asked to provide the past two years of their third grade MAP data from the fall and spring.

The six schools that were invited to participate were grouped into three pairs based on similar demographics or similar localities (See Figure 1.1 for the chart of schools invited and their demographics).

Group 1						
Grouping Quality: Same school division						
School Name	Grade Span	# of Students	% of minorities	Accreditation Status	% SPED	% Economic Disadvantaged
School 1A	3–5	248	31.50%	Fully Accredited	8.10%	52.40%
School 1B	PreK–5	356	34.60%	Fully Accredited	8.40%	61.50%
Group 2						
Grouping Quality: Neighboring Counties, Both rural school divisions						
School Name	Grade Span	# of Students	% of minorities	Accreditation Status	% SPED	% Economic Disadvantaged
School 2A	3–5	386	20.20%	Partially Accredited	9.60%	51.30%
School 2B	PreK–5	602	33.20%	Fully Accredited	10.80%	62%
Group 3						
Grouping Quality: Both inner city schools in the same state						
School Name	Grade Span	# of Students	% of minorities	Accreditation Status	% SPED	% Economic Disadvantaged
School 3A	3–5	862	72.50%	Fully Accredited	10.20%	49.80%
School 3B	PreK–5	624	74.80%	Fully Accredited	17.50%	74.80%

Figure 1.1: Groups of Students and Their Demographics

Group 1 consists of School 1A and School 1B. School 1A is a sister-school model school in a rural district. School 1B is a traditional PreK–5 school and is in the same division as School 1A. School 1B was asked to participate because it is in the same division as School 1A and thus should have comparable funds and resources available to



them. Group 2 consists of School 2A and School 2B. These schools were chosen to invite to participate because they are both in a similar location in the same state, but not in the same district. They do not have the same funds and resources available because they are not in the same division; however, they are both in very rural communities and the school divisions are neighboring each other. School 2A is a sister-school model school, while school 2B is a traditional PreK–5 school. Group 3 consists of School 3A and School 3B. Both schools are in inner city school systems in the same state. They are not in the same district but share similar demographics and are city schools. School 3A is sister-school while School 3B is a traditional PreK–5 school.

**Data Analysis.** From the two years of MAP data collected, each of the participating schools' data was recorded in a spreadsheet representing each school and the data from their third-grade students. The school's mean scores of student growth for each school was represented by grade level in the chart. The amount of student growth from year to year was calculated and averaged for both groups: traditional PreK–5 and separated PreK–2 and 3–5 elementary schools. The statistical means of the two groups underwent two *t*-tests (*t*) for independent means that compared the two scores to conclude if there is a positive, negative, or no relationship between the different grade configurations (Efron & Ravid, 2013, p. 204). The *t*-test is a statistical test often used with small samples sizes “to see whether a difference between the means of two samples is significant” (Fraenkel et al., 2015, p. 233). These two tests were used to determine if there is a relationship between student growth on MAP testing and elementary grade spans.

## **Positionality**

As a former teacher at a small, rural elementary school that contains grades 3–5, and then as the assistant principal at the school, my positionality to this study is unique. My positionality is also one of a parent with one student in the primary school and one who will be a student at the primary school soon. The elementary school where I worked is not currently accredited by the state, nor has it been for the past three years.

Additionally, our third-grade scores continued to be among the lowest in the state. The research I conducted studied the difference in student growth between a conventional (PreK–5) elementary school and the less common sister-school model which has 2 schools, one primary (PreK–2) and one elementary (3–5). There are two reasons I believed there would be a difference in these two variables between the two models: an extra transition year for students and a lack of communities of practice between the two bifurcated schools. Thus, for this study my positionality was a reciprocal collaboration positionality. A reciprocal collaboration positionality is a study with insider-outside teams (Herr & Anderson, 2015). The main sample of this study was the third-grade students at the elementary school where I worked and their growth data. Having taught fifth grade there, and then as the assistant principal, I am an insider. Even though the central school studied was the school where I worked, outsider schools with similar and different grade configurations participated to compare and contrast their data and student academic growth.

## **Significance and Limitations of the Study**

In this quantitative study, I aimed to determine if there was a difference in student academic growth between traditional elementary school and bifurcated sister-school

models. Similar to a dissertation by Ratin (2017), the intended audience was the superintendent, school board, other central office staff, and administrators in the district where I work who have the authority to restructure grade configurations or make the appropriate changes if necessary. Additionally, other schools with similar grade configurations might be interested in these results to make changes in their divisions if necessary.

One limitation of this study is that this study uses quantitative data that is collected twice a year. Using only MAP scores, which are given twice a year, might not give the full perspective of student academic growth. Additionally, the quantity of data obtained and analyzed is a limitation. If more data was collected and there was increased collaboration between sampled schools, more scores and comparisons could have been studied to support the conclusions. Lastly, even though the schools were chosen based on similar demographics, a limitation could be economic differences, differences in specific curriculums taught, or different programs offered at the schools.

### **Organization of Dissertation**

The remaining chapters of this dissertation will discuss the related literature and methodology more in-depth. Additionally, I will discuss the results of the study, limitations, recommendations for future research, and conclusions.

### **Definition of Terms**

**Academic Growth.** For this dissertation, academic growth is the academic progress students make from the beginning of the year MAP test to the end of the year MAP test.

**Grade Span Configurations.** “The range of grades that a school comprises”

(Coladarci & Hancock, 2002, p. 2).

**K–2 Primary School.** A school that teaches students starting in kindergarten through second grade.

**3–5 Elementary School.** A school that teaches students starting in third grade through fifth grade.

**K–5 Traditional Elementary School.** A school that teaches students starting in kindergarten through fifth grade.

**MAP Test.** A national-normed, computer adaptive test that measures what students know and shows student growth from year to year in both reading and math.

**Sister-school Model.** The name for elementary schools with two separate elementary schools, one primary (K–2) and one elementary (3–5).

**Transition.** A transition year occurs the year when students change schools or “transition” from one school to the next.

## Chapter 2: Review of Literature

During the 19<sup>th</sup> century, most schools in the United States were set up in a one-room, one-teacher schoolhouse model. In the 20<sup>th</sup> century, schools began to configure grades into distinctive elementary and secondary schools (Cook, et al., 2008). Since then, educators have continued to question and research grade-span configurations to determine the best configuration for students. As the country's beliefs and workforce have shifted, so have the ideas about grade-span configurations in our schools.

### **Problem of Practice**

Grade-span configurations have been researched and debated for many years (Bickel, et al., 2000; Coladarci, T., & Hancock, J., 2002; Combs et al., 2011; Cook et al., 2008; Dove et al., 2010; Franklin, & Glascock, 1996; Johnson et al., 2009; Rantin, 2016; Schmitt, 2004). Grade-span configurations can be defined as the range of grade levels that are within a school (Cullen & Robles-Pina, 2012). Much of the research around grade-span configurations study the middle grades, 5–9. A majority of the research concludes that schools with larger grade-span configurations yield students with higher levels of achievement (Bickel, et al., 2000; Coladarci, T., & Hancock, J., 2002; Franklin, & Glascock, 1996; Rantin, 2016; Renchler, 2002; Schmitt, 2004). An uncommon grade-span configuration that has not been tested is the sister-school model of elementary schools. A sister-school model is an elementary school that is broken down into two separate elementary schools—one primary (PreK–2) and one elementary (3–5). Only 2.8% of elementary schools are configured with this sister-school model in the United

States (NCES, 2018). Due to the small number of schools impacted nationally by this grade-span configuration, research has not been completed to test the effectiveness of this configuration.

### **Purpose of the Study**

The purpose of this study was to investigate the impact the sister-school model grade-span configuration had on student academic growth. In the central region of Virginia, there are multiple schools with this grade-span configuration. One of the schools is in a district that is going through a future renovation project of the primary (PreK–2) school. This research could help add information to the decision process to continue with the sister-school model with a primary and elementary school or to change both schools to housing PreK–5 students.

### **Research Questions**

To research and determine the best grade-span configuration for PreK–5 students I attempted to answer this question:

What is the difference in student academic growth between a conventional (PreK–5) elementary school and the less common sister-school model which has 2 schools, one primary (PreK–2) and one elementary (3–5)?

### **Organization of Chapter**

This chapter will discuss in detail the theoretical foundations of transitions and communities of practice. It examines educational historical perspectives and the shift and transformation of educational grade-span configurations through United States history. Related literature about studies completed on the topics of communities of practice in schools, transitioning effects on students, and studies completed on grade-span

configurations will be presented. Lastly, the literature review will discuss a summary of related research and the conclusion that there was a need for this study based on the gap of research.

### **Purpose of the Literature Review**

A literature review adds value to educational research. A literature review “is a written argument that supports a thesis position by building a case from credible evidence obtained from previous research” (Machi & McEvoy, 2016, p. 5). It helps the reader understand the current research already completed on the same topic and builds a case for the need for an additional study. Literature reviews should include both supportive and oppositional research to accurately present what has been studied previously. The researcher must ensure to include only studies that are viewed to be factual, present data as presented by that researcher, and present research from both sides of the argument. According to Machi and McEvoy (2016), the literature review completed for this study is a simple literature review—one intended to “argue a position about the current state of knowledge on a topic” (p. 3).

A preliminary review of the literature found little support for the hypothesis that students in sister-school models have less academic growth than students in traditional PreK–5 schools. The search started on the library database Education Resource Information Center, ERIC. The descriptor words originally used in the ERIC database were: *K–2 schools*, *primary versus elementary schools*, and *sister-school models*. These search results did not yield studies and articles that were related to the purpose of this study. The search engine Google was then used with the same very broad topics. After searching on Google, two articles helped tailor the descriptors used on ERIC to find more

relevant studies. The two articles that helped discover the appropriate descriptors were “K–8 Schools: An Idea for the New Millennium?” (Cromwell, 2010) and “Grade Configuration in K–12 Schools” (McEntire, 2005). These articles mentioned many related studies as well as terms such as *grade configurations*, *grade span*, and *transitions*. These words then became the descriptors used in the ERIC database. In addition to these search descriptors, the related studies presented in the two articles found on Google were researched that allowed more studies and related literature to be found through their studies.

### **Theoretical Foundations**

The theoretical foundation of this study includes the theories of transitions and communities of practice. “Transitions” occur when students change schools at any age between different grade-span configurations (Cullen & Robles-Pine, 2012).

“Communities of practice” is a term used to describe teacher teams that work together and co-plan and openly collaborate to help meet the needs of all their students (Wenger, 2015).

When students transition to new schools, they face many different nuances. Schlossberg’s Transition Theory posits that transitions include “any event, or non-event that results in changed relations, routines, assumptions and roles” (Schlossberg, 1995, p. 27). Schlossberg’s Transition Theory believes there are three types of transitions: anticipated transitions, unanticipated transitions, and non-events. When students transition between schools, they are experiencing an anticipated transition, “one that occurs predictably” (p. 29).



Cullen & Robles-Pina (2012) explain that students are faced with many different new obstacles when they transition to a new school. Students are faced with a new building layout, a new structure to get familiar with, as well as a new daily schedule. Students will need to learn to navigate their new school and familiarize themselves with the new schedule quickly. These obstacles are just part of the transition that occurs for students. Ryan et al. (2013) mention that when students transition schools, they also have new teachers, new classroom rules and expectations, and potentially new students in their classes. This literature review will present cases that support Schlossberg's Transition Theory and the idea that when students transition to new schools, there is an academic decline due to these aforementioned factors (Rice, 1997; Ryan et al., 2013; Wren, 2003).

Transitions to new schools are anticipated transitions students encounter. Because they are anticipated transitions, teachers can help alleviate some of the transition effects students face. A community of practice between teachers is a group of teachers "who share a concern or passion for something they do and learn to do it better as they interact regularly" (Wenger, 2015, p. 1). Since teachers at the previous school and new school all share concern and passion for the students affected by the transition, teachers can use a community of practice to help the transition occur seamlessly for the students.

Lave (1991) first defined communities of practice as "collective enterprises" (p. 74) that work or learn together for a common goal. Lave (1991) states that his theory of communities of practice is based on situated cognition. Situated cognition is the theory that learning "cannot be separated from the context in which it is learned" (Altalib, 2002, p. 3). In addition, situated cognition is the belief that "every human thought is adapted to the environment, that is, situated, because what people perceive, how they conceive of

their activity, and what they physically do develop together” (Driscoll, 2005, p. 157).

After Lave (1991) created the communities of practice theory, Wenger and Lave worked together to further explain the theory.

Wenger (2015) stated that “communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor” (p. 1).

Wenger (2015) explained that members of the community of practice “engage in joint activities and discussions, help each other, and share information” (p. 1). In schools, communities of practices are teachers who build relationships to work together to learn and improve education and learning environments for their students. This review will use Lave’s theory of communities of practice to present studies that found that communities of practice in the school are in the best interest of students (Brower et al., 2012; Lawthom, 2011).

### **Historical Perspectives**

Education has changed and evolved since school started in the United States in the 19<sup>th</sup> Century. This section of the literature review will discuss some historical perspectives that help shape the problem of practice for this study. This study will look at the differences between traditional PreK–5 schools and bifurcated PreK–2 and 3–5 schools. This section will look at how these grade-span configurations developed over time and current government initiatives that affect these schools.

**History of School Structuring in the United States.** Rural education started in one-teacher, one-room schoolhouses where students did not receive grades (Franklin & Glascock, 1996). Since many students did not continue schooling through twelfth grade,

due to students dropping out to work in order to help support their families, this one-room schoolhouse model was sufficient during this period (Rantin, 2017).

After the ungraded one-room schoolhouse, graded schools started to be introduced. “Graded schools was [sic] not introduced until the mid-1800’s in the Boston Schools and rapidly spread across the Country” (Rantin, 2017, p. 4). These graded schools started in larger towns and cities, and eventually spread to the more rural areas.

Later, Ellwood Cubberley, a teaching professor, “proposed that large schools in central locations could provide more and better education and resources” (Howley, 2017). Since then, the idea of larger schools in central locations started to become more popular. The grade-span configuration of these original centrally located schools were grades 1–8 and 9–12. These schools were more relevant in towns and cities and less common in rural areas where agriculture and working on the farm was still significant (Howley, 2017).

After the launching of Sputnik in 1957, there was an increase of funding in the United States to increase science education to keep up with other countries (Johnson et al., 2009). President Lyndon Johnson began collecting funds for education in the 1960s through the Office of Education (Rantin, 2017). The original purpose of the Office of Education was to collect statistics but has obviously evolved to much more.

When the Elementary and Secondary Education Act (ESEA) was passed by the U.S. Congress in 1965, the federal government undertook a larger role in education (Dove et al., 2010). Education, which traditionally had been seen as a state-level entity, then began to have more and more oversight by the federal government. In 1977, a national study indicated a decline in student achievement. Due to these results, in 1979,

the U.S. Department of Education was created under President Jimmy Carter, with the purpose of creating equal opportunities for all students to obtain an education (Rantin, 2017).

In the 1980s, President Ronald Reagan's administration published a report called *A Nation at Risk*, and reforms were implemented that were designed to increase student achievement. Following President Reagan's initiatives, President George H. W. Bush and President Bill Clinton followed the lead and created federal education goals and mandates (Dove et al., 2010). When President George W. Bush was elected, he too pushed for more educational reforms.

Specifically, under President George W. Bush, the No Child Left Behind Act was the federal mandate passed to increase student achievement through increased accountability for schools and teachers (Johnson et al., 2009). It became the U.S. Department of Education's responsibility to collect state data and individual school data on student achievement and achievement gaps (Dove et al., 2010). Schools reported their Adequate Yearly Progress (AYP) in the accountability categories and federal funding began to be tied to the progress and goals.

Currently, public schools follow Every Student Succeeds Act (ESSA) that was created under President Barack Obama's administration. This federal mandate seeks to ensure equity in schools and close achievement gaps between minorities students and students who receive special education services (U.S. Department of Education, 2019). In addition to student achievement, ESSA also looks for teacher competences and hopes schools will employ teachers who are highly qualified and have advanced degrees.

**History of Grade-Span Configurations.** Grade-span configurations have changed since the creation of public education in the United States. Many of the changes were based on “geographic locations, student populations, limited financial resources, and community preferences” of states and localities (Rantin, 2017, p. 13).

After the one-teacher, one-room schoolhouses where students did not receive grades, many schools started to shift to consist of grades 1–8 elementary schools and separate high school, 9–12 (Howley, 2017). After the shift to two separate schools, the country went through another educational shift. “As our country changed from primarily agricultural to industrial, children needed more education in order to secure better employment” (Dove et al., 2010).

Junior high schools were first created in 1909 by Superintendent Frank Forest Bunker in Berkeley, California (Franklin & Glascock, 1996). His grade span configuration consisted of elementary schools holding students grades 1–6, middle school with grades 7–9, and high school with grades 10–12. It was his belief and others that the addition of junior high school was “physiologically, psychologically, sociologically, and logically correct” (p. 4).

In 1918, at the close of World War I, men returned home and searched for new jobs. As the economy started to flourish again, the country was able to invest money in paving roads (Rantin, 2017). This allowed people to travel easier and quickly access areas that were previously considered remote. This increased the effectiveness of travel allowing students to attend larger, more distant schools (Rantin, 2017). During this time, Mr. Bunker’s grade-span configuration of the grades 1–6 in elementary school, grades

7–9 in junior high school, and grades 10–12 in high school became a popular configuration (Rantin, 2017).

Looking at Mr. Bunker’s grade-span configuration, after elementary school students attended junior high schools (grades 7–9) where the focus was transitioning and preparing students for high school. In 1963, the “life adjustment movement” created a shift towards middle schools where the environment was more child-centered (Dove et al., 2010).

When “baby boomers” became school aged in the 1970s and 1980s, schools had to reconfigure their grade-span configurations again due to overcrowding in their current schools. During this time is when the most popular current grade-span became introduced: K–5, 6–8, and 9–12 (Rantin, 2017). In the beginning of the 1970s, “less than one-quarter of middle schools incorporated sixth grade” (Cook et al., 2008). However, a shift towards including sixth grade in middle school rapidly increased after that. Currently, three-fourths of all middle schools include sixth grade (Cook et al., 2008).

Since the creation of middle school, some schools have kept or reverted to the K–8 elementary school based on funding and limited student enrollment (Franklin & Glascock, 1996). This change to revert to K–8 elementary schools was also done in hopes to increase student academic achievement by reducing transitions (Dove et al., 2010).

Even though the most popular grade-span configuration currently is the PreK–5, 6–8, and 9–12 configuration, there are still many schools that are not set up this way. Other popular configurations still include sixth grade at the elementary school level,

eighth grade at the high school level, and ninth grade students at the middle school level (Franklin & Glascock, 1996).

The problem of practice of this study investigates the differences in student academic achievement between two different types of grade-span configurations. The grade-span configurations investigated in this study are the traditional PreK–5 model and the sister-school model. Learning the history of grade-span configurations has helped understand the reason behind the many different grade-span configurations still present in education in the United States.

### **Related Research**

This section of the literature review will discuss related research that supports the need to investigating the differences between academic achievement in two elementary grade-span configurations. In the first section, research articles that study Lave’s communities of practice theory and their benefit on student learning will be presented. The next section of the related research will explain studies that demonstrate both negative effects and no noted effects on students after they transition to a new school. Lastly, related research will be presented that reveal findings researchers have found on the most effective grade-span configurations for schools.

**Communities of Practice.** Brower et al. (2012) describe communities of practice (CoP) between teachers as “teachers’ collective engagement in sustained efforts to improve practices” (p. 347). In this section of the literature review, different studies that have been completed on teacher CoP will be presented. Studies that conclude that CoP are beneficial in schools will be presented (Brouwer et al., 2012; Lawthom, 2011). In addition, a study by Hurley et al. (2018) will be examined. This study concluded that

CoP in the district did grow after support and professional development provided from central office and school administration, but they could not definitively state whether students' academic achievement scores were affected by CoP due to sampling errors.

***Benefit of CoP in Schools.*** Brouwer et al. (2012) sought to determine the extent to which CoP actually occur in schools. Quantitative and qualitative data was collected in the form of questionnaires and observations. Seven teacher teams from high schools were used as the sample of this study. The samples were chosen by theoretical sampling, finding “participants who reflected the characteristics as identified in the theoretical framework” (p. 351). The researchers wanted to find samples that had diversity in the CoP teams. Brouwer et al. looked for diversity in teams that had differences in number of years teaching, tenure statuses, occupational experience, gender, and age. Each of the seven sample teams were given a “team room” that could be used as a communal space for preparing lessons and grading assignments together. Each team member, of the seven teams, was given a questionnaire to measure the “degree of mutual engagement, degree of shared repertoire and degree of joint enterprise” (p. 352). The researchers observed the seven teacher teams in the “team rooms” to observe the teams working together.

Brouwer et al. (2012) concluded that the seven teacher teams observed and questioned at the secondary level were communities of practice. The authors concluded this despite the seven community of practice team's hesitation to self-admit their belief that they were among communities of practice. The findings of this study support the idea that teachers do not have to be teaching the same subject, or grade level, to work in communities of practice. However, being in the same work environment, working together, does create a community of practice. This could support the idea that students



who attend larger grade-span configurations have higher amounts of academic achievement because there are more teachers working together in a larger community of practice to assist all the students in the school.

In a similar study, Lawthom (2011) looked at a community of practice at the university level to explain how CoP can be positive to reaching shared goals. Lawthom studied a program at a university in the United Kingdom. Lawthom (2011) found through his study that communities of practice have human and nonhuman features. Communities of practice can encompass buildings, relationships, and environments. Lawthom explains, similarly to Brouwer et al. (2012), that communities of practice can be interpreted differently by different people. The students and professors that were part of the program did consider their “team” to be a community of practice; however, others, who were not part of the specific program, also considered themselves part of the community of practice. Lawthom (2011) concluded that communities of practice can be broadened outside of a program, to include others who are passionate and want to work as a team. This conclusion can be very valuable towards the potential of a sister-school model grade-span configured schools to work as one community of practice to help equate high levels of student academic success.

A study by Hurley et al. (2018) wanted to determine if strong communities of practice in schools equate higher levels of student achievement. Hurley et al. studied teachers and students in a large school district in Canada. The first round of surveys had 1,423 teachers return the surveys from a school district. In a three-year time period, the district’s school board and administration provided professional development and implementation of professional learning communities, PLC, in the division. At the end of

the three years, the same questionnaire with 32 items using a 5-point Likert scale was sent out and returned by 1,574 teachers. In addition to these teacher questionnaires, student reading achievement data was collected by criterion-referenced tests during the three years. The data was used to determine if schools PLCs grew over the three years and if the increase in PLCs would impact students reading achievement. Hurley et al. (2018) determined that the sample districts PLCs did increase in the three-year time period with a push from the school board and administration. Hurley et al. (2018) stated one limitation of this study is the difference in the number of teachers and schools that participated in the first and second round of the study. More teachers and schools in the district participated in the second round of the study. Without those initial results from those teachers and schools at the beginning of the study, it was difficult for the researchers to determine if the increase in student academic growth was from increasing PLCs or other factors.

One of the theories this problem of practice is framed around is Lave's theory of communities of practice. Communities of practice are "aggregates of people who share doing, talk, and beliefs and values" (Lawthom, 2011, p. 153). Brouwer et al. (2012) concluded that communities of practice do occur in schools and they can include teachers that have many diverse characteristics. Lawthom (2011) expanded upon Brouwer et al.'s study to find that communities of practice can be larger organizations of people and can exist outside of one specific program or school. Hurley et al. (2018) concluded that schools can work together in CoP to help benefit students; however, the relationship between student academic growth and increase in CoP was inconclusive due to sampling errors.

**Transitioning.** Transitioning occurs when students move or transfer to a new school. This section of the literature review will present studies that have researched the effect transitioning has on students. In the first section, three studies that show transitioning has a negative effect on student achievement will be discussed (Cullen & Robles-Pina, 2012.; Rice, 1997; Wren, 2003). In addition to a decline in student achievement, one research study by Ryan et al. (2013) will show a decline in student intrinsic motivation after a transition to a new school has occurred. In the second part of this section, one study by Weiss & Bearman (2007) will be presented that came to the opposite conclusion. They found that there is a transition effect; however, it is due to other factors, not the transition itself.

***Decline in Student Achievement and Intrinsic Motivation.*** Wren (2003) wanted to examine if grade-span configurations and transitions affect student achievement in inner-city schools in Michigan. The sample included 232 schools from an inner-city district in Michigan. The sample consisted of 91% African American students in the sample schools. The Michigan Educational Assessment Program (MEAP) was the quantitative data collected for this study. The independent variable of this study was the grade-span configuration and transition programs in the sample schools. The dependent variable was the results on the MEAP tests. Schools were given codes based on their grade-span configuration. Data was collected from a public server, the Standard and Poor's School Evaluation Services website. After collecting data, Wren (2003) used a simple linear correlation to find a relationship between grade-span configuration and student achievement and transitions. A multiple regression analysis was used to find the effect of transitioning and grade-span configuration on achievement. Wren (2003) did

find a positive correlation between larger grade-span configuration and student achievement. In addition, Wren (2003) found a significant negative correlation between transitions and student achievement. Wren found that “as grade span configuration increases so does achievement. The more grade levels that a school services the better the students perform. The more transitions a student makes, the worse the students performs” (p. 10). In the sister-school model, students transition schools in third grade. According to Wren’s (2003) conclusion, it would be understandable that there is a negative effect on students’ academic achievement due to the transition in third grade when students attend a sister-school model.

Rice (1997) conducted a similar study to find a relationship between students transitioning from middle to high school and the impact on students’ academic progress in math and science programs during the transition. Additionally, the study examined the impact the transition has on at-risk students. The study included a sample size of 3,116 students. This study was a longitudinal study that followed students for four years. The study started when the students were in seventh grade and continued until they were in tenth grade. Students were given an identification code to keep student identities anonymous. Rice (1997) used the students National Assessment of Educational Progress (NAEP) scores each year to conduct her analysis. She also obtained students’ background information to correlate her findings. The independent variables were the “school discontinuity and student background variables” (Rice, 1997). Rice (1997) found that all students experience negative effects during the transition from middle school to high school in math and science programs. However, there was evidence that students that come from more stable and supportive home environments transition easier

than students with little or no support at home. The main sample of this problem of practice is a small, rural school system where there is a high percentage of at-risk students. The conclusions made from Rice (1997) show the importance of reducing transitions for these students to help demolish the declines in student's academic achievement due to additional transitions.

Cullen and Robles-Pina (2012) wrote an article to examine previous studies on transitions and to present the findings on transiting effects as it relates to friendship quality, social concerns, and academic performance. The authors chose research studies that were peer-reviewed journal articles, newsletters, or unpublished manuscripts. They used the search descriptors *grade span*, *school transitions*, and *elementary and secondary*. Twenty-one studies were read and represented in their study. The authors found a decrease in academic performance whenever a transition occurs. This examination of studies additionally supports the idea that sister-school model schools create additional transitions for students that create a decline in academic performance.

Ryan et al. (2013) completed an investigation on the transition between elementary and middle school and study students' academic adjustment and relational self-worth in six-month intervals between the transition. The two-year longitudinal study used 738 students from 15 elementary schools as their sample. The study used six-month intervals and students were given surveys every six months for two years. Not only were surveys used to collect data on the relational self-worth of the students, but student grades were also collected. Descriptive statistics were used for each data point and growth trajectories were created based on data. Growth curves were analyzed to find conclusions. The researchers found that not only did student GPA decrease when

entering middle school, but also that intrinsic value for schoolwork declined during the transition.

All studies mentioned in this section conclude that transitioning schools has a negative effect on students (Cullen & Robles-Pina, 2012; Rice, 1997; Ryan et al, 2013, Wren, 2003). These studies help support the case that there is a need to study the transition effect on students that attend the sister-school model grade-span configuration. Should there be a noted decline in student academic success in students who attend the sister-school model over the tradition K–5 model, these studies could help support changes in grade-span configurations in school districts.

***Opposing View.*** The purpose of a study by Weiss and Bearman (2007) was to determine if there are transition effects that impact students entering high school. The researchers looked at many different schools, students, and variables for their study. The study was a stratified design, a study that used region, urbanicity, school type, and ethnic mix as the strata before randomly selecting samples from those groups. Information from the National Longitudinal Study of Adolescent Health was used to find the sample schools requested to participate in the study. Of the schools contacted, about 80% of schools agreed to participate. In the 132 sample schools, over 90,000 students were given in-school questionnaires. School administrators at each school also completed questionnaires for the study. In addition to in-school questionnaires, the researchers completed 20,745 in-home interviews to ask more in-depth questions to students and families. The dependent variables used for this study were academics, drug/alcohol/tobacco index, delinquency, weapon to school, grade point average, school integration, and trouble in school. The independent variables were IQ, student retention,

school size, minority status, and private/public school, and grade span configurations. Weiss and Bearman (2007) found that there are transition effects that affect students transiting schools; however, the effects are not due to the transition by itself, but by different factors. They concluded that the degree of change between students entering high school in the ninth grade is very similar to the degree of change between students entering ninth grade that are not changing schools. Even though the results of this study do not conclude that transitioning has a negative impact on student achievement, a change was still noted. This research study was conducted at a high school level and can still add value to a study which will test to see if there is a difference between transitions in younger grades by analyzing their research methods.

**Grade-Span Configurations.** Grade-span configurations have drastically changed since the one-room, one-teacher, no grades schoolhouse in the 1800s. Today we can find many different grade-span configurations in the United States (NCES, 2018; Warthan, 2011). The most common grade-span configuration in the United States includes an elementary school (K–5), middle school (6–8), and high school (9–12) (NCES, 2018). Even though this is the most common configuration, there are still many different grade configurations in schools in the United States. Researchers have frequently studied and debated which grade-span configuration is best and most effective. In this section, three different types of studies on grade-span configurations will be presented. First, studies that conclude that larger grade-span configurations benefit student’s academic achievement will be presented (Coladarci, T., & Hancock, 2002; Franklin, & Glascock, 1996; Rantin, 2016; Renchler, 2002; Schmitt, 2004). Next, studies that argue the best grade-span configuration for middle school grades will be presented

(Combs et al., 2011; Cook et al., 2008; Johnson et al., 2009). Lastly, two studies will be presented whose results conclude that larger grade-span configurations has no impact or a negative impact on student achievement (Bickel et al., 2000; Dove et al. 2010).

***Larger Grade-Span Configuration Benefits on Achievement.*** In a study completed by Franklin and Glascock (1996), the researchers wanted to determine if there is a relationship between grade-span configurations and student performance. Their definition of student performance included student achievement and student persistence. Student achievement was based on test scores, while student persistence included attendance, suspensions, expulsions, and dropouts. Franklin and Glascock (1996) studied 156 Louisiana schools as the sample of their study. They collected data on attendance, suspension, explosion, and dropout rates, along with criterion-referenced test scores, norm-referenced test scores, and American College Test, ACT, scores. They conducted MANOVA, Multivariate Analysis of Variance, tests on each data point collected. Franklin and Glascock (1996) concluded that students who attended schools with larger grade-span configurations yielded higher academic performance on both achievement and persistence in the lower levels. Students in sixth and seventh grade performed better when combined with either elementary or high school. Franklin and Glascock's (1996) findings help support the hypothesis that students in elementary school will perform better in larger grade-span configured schools.

Coladarci and Hancock (2002) completed a study that analyzed different studies with the "focus on the relationship between grade span and academic achievements" (p. 2). The researchers read and analyzed fourteen different research studies on grade-span configurations. The researchers, based on their knowledge base and experience as



parents, believed that they would find students who attend 6–8 middle schools would have higher academic achievement than students who attend K–8 schools. They believed this would be the case because they assumed it was important to separate young adolescents from older children to best meet their developmental needs. Their research yielded the exact opposite findings from their hypothesis. They found that all fourteen studies concluded transitions have a negative impact on students and schools that were set up with a K–8 grade-span configuration had better academic achievement than the school systems that had K–5 and 6–8 schools. Coladarci and Hancock’s (2002) study also supports the hypothesis that larger grade-span configurations are more beneficial for students.

In a three-year longitudinal study, Schmitt (2004) wanted to determine the difference grade-span configurations and levels of engaging professional development had on student achievement. The researcher wanted to look at three different grade-span configurations in the study: K–8, 6–8, and 7–12. Using these three grade configurations, Schmitt (2004) wanted to see which grade-span configuration, paired with high levels of professional development, had the highest student achievement on standardized test scores. Schmitt (2004) completed a three-year longitudinal study in a Midwestern state. She used student standardized testing scores, along with principal and teacher surveys, to correlate professional development, test scores, and grade span configurations. Surveys were sent out to 500 principals in the state. Of those, only 255 principals responded. Questionnaires were sent to the 255 schools and those schools were asked for their standardized test scores. Of those 255 schools, only 43 schools fully responded and were used as the sample size. Schmitt (2004) concluded that based on the results there

appeared to be a slight relationship between “levels of professional development and middle level grade configurations” (p. 12) with student achievement; however, it was concluded more research was needed due to the small sample size.

All the aforementioned studies used public school data in their analyses. A study completed by Rantin (2017) used a quantitative correlational design study to investigate three different grade-span configurations for sixth grade and the effects of those grade-span configurations on academic achievement for private school students in Florida. The three different grade-span configurations tested for this study were “kindergarten to sixth grade model (K–6), kindergarten to eighth grade model (K–8), and the sixth to eighth grade model (6–8, MS)” (Rantin, 2017, p. iv). The TerraNova, Third Edition, was the instrument used to collect data on student achievement. This assessment is given to private school students in the fall and spring. The dependent variable of the study was the mean score on the TerraNova test, while the independent variable was the different grade-span configurations. ANOVA, analysis of variance, test and the test of homogeneity were completed on the mean scores to determine the relationship between the variables. Rantin (2017) concluded that students in the private schools in Florida that were sampled had higher academic success on the TerraNova, Third Edition, when they attended K–6 or K–8 over the 6–8 middle school model. These results add to the related literature that larger grade-span configurations are more beneficial to student academic success even though these results study private not public-school students.

Renchler (2002) completed a literature review with the goal of examining articles that researched grade-span configurations and present the conclusions from those studies. Every study mentioned in the article concluded that transitions effect students in a

negative way and schools with larger grade-span configurations yield students with higher academic achievements. Renchler (2002) presented many hypotheses based on the articles he cited in his journal review. He hypothesized that school systems with narrow grade-span configurations have more student turnover and can affect school's community negatively. In addition, he believed students in a K–8 grade-span configuration scored higher on their end-of-the-year assessments because students in the same school can be tracked and staff communication is higher at the same school. He also alleged that K–8 schools achieve higher academic success because they are more child-oriented than traditional 6-8 middle schools. Renchler's overarching conclusion of his literature review was that students who attend larger grade-span configured schools have higher academic success than students who attend narrower grade-span configured schools.

***Middle School Configurations.*** Johnson et al. (2009) completed a study to determine the relationship between grade-span configurations and standardized science test scores for fifth-grade students in different configurations. Their study examined fifth-grade performance on the science Texas Assessment of Knowledge and Skills (TAKS) in two different configurations: an elementary K–5 school and an intermediate 5–6 school. The study took place in one school district over three years. The sample included three elementary schools and six intermediate schools in the districts. There were 3,388 fifth-grade students who took the fifth grade TAKS test over the three years in this school district. The sample included students from different races, with an overwhelming majority of the students being identified as minorities. The student scores went through  $z$ -tests to analyze the results. Johnson et al. (2009) concluded that the fifth-

grade students who attended the elementary schools (K–5) performed significantly higher on the science TAKS test than the students who attended the intermediate (5–6) school. Even though these results show that larger grade-span configurations equate to higher academic results, these results are limited because Johnson et al. (2009) used only one district for their study.

Combs et al. (2011) wanted to determine if fifth grade students have higher academic achievement scores on the TAKS assessment when placed in elementary schools (K–5) or middle grade schools (5–6 or 5–8). The researchers collected standardized test scores from 1,356 Texas schools (678 elementary schools, and 678 intermediate schools). Five years' worth of data was collected for the study. The TAKS reading and math scores were collected. Schools were matched based on school size, low socioeconomic status, mobility, and limited English proficiency rates. The data was coded, and a Mann-Whitney U and z-score tests were completed on the data. It was concluded that fifth grade students who attend an elementary school setting (K–5) have significantly higher TAKS scores for each of the five years of data collected in both reading and mathematics. The study by Combs et al. (2011) is nonexperimental; they did not change anything in the study, but simply presented the data. Combs et al.'s (2011) study was an important study in the shaping of this current problem of practice. Their study matched schools based on size, low socioeconomic status, mobility, and limited English proficiency rates. These categories used by Combs et al. (2011) were the starting point for the matching criteria for my problem of practice; however, one additional category, percent of special education students, was added.

Cook et al. (2008) compared different middle school grade-span configurations. The purpose of this study was to see if sixth grade was more beneficial for students when added to middle school, 6–8, or kept in elementary school, K–6. The researchers used end-of-grade test scores for math and science, along with the number of student referrals as quantitative data. Out of 342 possible schools they could have chosen, they purposefully chose 117 for their study due to convenience to the researchers. After statistical testing, Cook et al. (2008) concluded that based on the referral data, students in sixth grade that attended a middle school were over two times likely to receive discipline referrals than those who attended elementary school in sixth grade.

***Larger Grade-Span Configuration—No Impact or Negative Impact on Students.*** In a study completed by Dove et al. (2010), the authors wanted to determine if there is a relationship between grade-span configurations for students in sixth grade in all Arkansas schools and their achievement scores for math and literacy on Arkansas Benchmark Examinations. Dove et al. (2010) mentioned many past studies that have concluded there is a relationship between transitions, grade-span configurations, and student achievement. However, the researchers felt those studies used small sample sizes and they wanted to perform a large sampled study to analyze the results in Arkansas. The sample included 355 Arkansas schools that had students in the sixth grade. The researchers looked for publicly released data from the Arkansas Department of Education website for the schools sixth grade state-wide testing results. Individual schools or students were not notified nor approved the study because only public records were used. Individual school names were not kept or categorized for the study. Only school scores on assessments and grade-span configurations were noted for each school. Statistical

analysis was conducted to find any relationship between grade-span configurations and test scores on the statewide standardized assessments. Dove et al. (2010) did not find a relationship between students' academic achievement based on the Arkansas Benchmark Examination for sixth grade students who attended different grade-span configurations.

Additionally, Bickel et al. (2000) aimed to determine if students who attend schools with wider grade-span configurations yielded higher equity gains. Their study used data from 1,001 Texas high schools. The sample schools included multiple grade-span configurations. They collected test-scores and other reportable data on the state's department of education website. Bickel et al. (2000) concluded that as school sizes increase, economically disadvantaged students experienced declines in academic achievement. Both studies, Bickel et al. and Dove et al., had a limitation of only using state published data. Both studies cautioned readers that the state-published data has no guarantee of complete accuracy. These studies, and their caution, were important reminders to contact schools directly to obtain data to help ensure more accurate results.

### **Summary/Gap in Research**

Schools and grade-span configurations have drastically changed during the expansion of our country and there has been an increase of state and federal mandates to monitor schools and keep schools accountable for the education their students are receiving. The theoretical framework of this problem of practice includes communities of practice between teachers and transitioning effects.

Many of the studies presented in this literature review have results that support the proposed hypothesis of this study: students who attend bifurcated sister-schools will have less growth in third grade compared to students attending the conventional K-5

elementary school. Studies presented have concluded that larger grade-span configurations yield higher school achievement results. Additionally, studies have been identified that verify transitioning has a negative effect on students' academic achievement. Lastly, studies have been discussed that conclude that when teachers are a part of the same community of practice in the same school, it has been shown to be beneficial for students.

Despite the reason for academic decline in students following a change of schools, there is a noted decline in student academic achievement. Many of the existing studies examine students in middle school and high school grade-span configurations. There is no research examining students who attend the bifurcated sister-school model (K–2 primary school and 3–5 elementary school). Due to the gap in related literature, this study will research the sister-school model grade-span configuration to determine if the sister-school model or the traditional K–5 grade-span configuration is best for student academic achievement.

## Chapter 3: Methodology

In the United States, the most common elementary school grade-span configuration consists of grades PreK–5 (NCES, 2018; Warthan, 2011). During the 2017–2018 school year, more than 50% of the elementary schools in the nation used the PreK–5 grade-span configuration (NCES, 2018). Of the additional grade-span configurations, one-grade span configuration is a sister-school model. The sister-school model separates the elementary school grade levels into two school campuses: one primary (grades PreK–2) and one elementary (grades 3–5) (Virginia Department of Education, 2017). Students that attend a sister-school model elementary school have an additional transition year when they change schools in third grade. I previously worked at a sister-school model elementary school that had students grades 3–5. We continued to see third grade students underperform on the state standardized tests. Due to the discrepancy between third-grade students compared to our fourth- and fifth-grade students, I became passionate about researching the impact a sister-school grade-span configuration has on student academic achievement.

Even though multiple studies have concluded that transitions result in lower student achievement and that schools with larger grade span configurations are more beneficial, many school systems continue to have schools that require more transitions for students based on space availability, traditional views, and economics (Clark, 2013; Combs et al., 2017; Cook et al., 2008; Cullen & Robles-Pina, 2012; Johnson et al, 2009; Rantin, 2017; Ryan et al., 2013; Wren, 2003). The purpose of this study was to



investigate if there was a difference in academic achievement between students who attend two different grade-span configurations (one being a traditional PreK–5 elementary school and one being a bifurcated sister-school model, PreK–2 and 3–5). In this chapter, the research design, participants, data collection methods, and data analysis methods will be discussed. In addition, validity and reliability as they relate to the data collection method will be explained. Lastly, limitations and summary of the chapter will be provided.

### **Research Design**

This study is a descriptive, quantitative action research study. Descriptive action research studies the “relationship between variables as they exist, without any attempt to change them” (Efron & Ravid, 2013, p. 43). The research question for this study was

What is the difference in student academic growth between a conventional (PreK–5) elementary school and the less common sister-school model with 2 schools, one primary (PreK–2) and one elementary (3–5)?

Multiple studies have been conducted that conclude transitions affect academic achievement in students the year after they transition. However, there has yet to be a study on the sister-school model elementary school. I hoped to use a quantitative approach to determine if there was a difference in academic achievement between third grade students at the traditional PreK–5 elementary school and the bifurcated sister-school model.

A quantitative approach was used to determine if there is a difference in academic achievement between the two models. If there was a difference, additional qualitative measures could have been used to determine the reason and rational for the difference.

However, I used a quantitative approach to first determine if there was a difference before making assumptions that the decline in academic achievement we saw at the sister-school elementary school that I worked at was typical of all sister-school model elementary schools.

Each sister-school model school in Virginia was contacted to see if their students participate in MAP testing. Of the schools that do MAP test, three sister-schools were invited to participate in the study as a purposive sample that is “chosen deliberately according to a predetermined purpose” (Efron & Ravid, 2012, p. 62). The three sister-school model schools were invited because they MAP test in the fall and spring in third grade, and they are located close to the school system in which I worked.

After three sister-school model schools were invited to participate, three traditional PreK–5 schools with similar demographics and localities were contacted to see if they MAP test and if they were willing to participate in the study. Three PreK–5 schools were invited to participate based on a representative sample, where “participants are selected for possessing or exhibiting the range of characteristics or behaviors in connection to the issue under investigation” (Efron & Ravid, 2012, p. 62). Six schools were formally invited with a letter of intent to participate in the study, along with information about the study and the purpose (see Appendix B for the Invitation Letter for School Participation). Invited schools were notified in the invitation letter that their schools’ name and information will be kept in confidence and will not be disclosed in the results. Of the six invited schools, four schools offered to participate in the study. The four participating schools provided their grade three “Grade Report” for two years’ worth of MAP data from their fall and spring testing sessions. The Grade Reports were

collected and school names were redacted from the Grade Reports and only their school code name was used (e.g. School 2A).

Before obtaining permission from schools to participate and before collecting data from the sample schools in the study, the University of South Carolina's Institutional Review Board ("IRB") granted permission to conduct the study. Individual student scores were not accessed for the study; only the overall grade-level mean scores were collected from the MAP test given in the fall and spring. With permission from the University of South Carolina's IRB, I then obtained permission from the four participating schools that agreed to participate and collected two years of their third grade MAP data. The data was used to represent current conditions with the goal of observing any academic achievement differences between students that attend traditional PreK-5 schools and the sister-school model schools.

If there was a noted difference between the two grade span configurations, the superintendent of the school system I previously worked at invited me to continue to work with their team to discuss options to alleviate the transition effects students feel when transitioning to the 3-5 elementary school and foster a community of practice between the primary and elementary school. Would it have been the case that there was a difference in academic achievement between the two different grade span configurations, qualitative measures would have been used to determine the rational for the academic achievement differences.

Even though I have recently moved school divisions and no longer work in a school division where there is a sister-school model school, I am still close with the school division where I worked for nine years and still work with them on many projects

and events that originated while I worked there. The superintendent and I have still been working closely to discuss previous research data and have discussed future collaborations at the conclusion of this study based on the results. Based on the results of this study, I can use the results in my current PreK–5 setting by learning more about student academic progress, student transitions, and communities of practice. The related research and the results of this study can provide insight that can be beneficial to any school despite the grade-span configuration.

### **Participants**

Six schools were invited to participate in the research study. Of the six schools invited, four schools accepted the invitation and provided MAP data. The four participating schools were placed in two pairs based on similar demographics or similar localities (See Figure 1.1 for chart of schools and their demographics). Schools were given codes to keep their identity confidential.

Group 1 consists of School 1A and School 1B. School 1A is a sister-school model school in a rural district in Central Virginia. School 1A has met state standards for the past three years and is fully accredited. This school consists of 31.5% racial minorities, 8.10% special education students, and 52.4% economically disadvantaged students (VDOE, 2018). The match with School 1A is School 1B. School 1B is a traditional PreK–5 school and is in the same division as School 1A. School 1B is also fully accredited and has met state standards for the past three years. This school consists of 34.6% racial minorities, 8.4% special education students, and 61.5% economically disadvantaged students (VDOE, 2018). School 1B was asked to participate because it is

in the same division as School 1A and thus should have the same funds and resources available to them.

Group 2 consists of School 2A and School 2B. These schools were chosen because they are both in a similar location in Virginia, but not in the same district. School 2A is a sister-school in a very rural community and has not met state standards for the past three years and is only partially accredited. This school consists of 20.2% racial minorities, 9.6% special education students, and 51.3% economically disadvantaged students (VDOE, 2018). School 2A is paired with School 2B. They do not have the same funds and resources available because they are not in the same division; however, they are both in very rural communities and the school divisions are neighboring each other geographically. School 2B is a traditional PreK–5 school. School 2B is fully accredited and has met state standards for the past three years. School 2B consists of 33.2% racial minorities, 10.8% special education students, and 62% economically disadvantaged students (VDOE, 2018).

Having previously worked at School 2A, I know this school is a Title I school that continually fails to meet state standards on the state’s standardized tests. The results of this study will be used to help School 2A, despite the outcome, make changes to assist in helping their students transition from second grade to third grade at a new school.

### **Data Collection Methods**

Each of the four schools participating (two traditional PreK–5 schools and two sister-schools) were asked to provide the first page of their second and third grade Grade Reports from the past two years of their MAP data from both the fall and spring testing sessions. The NWEA provides a Grade Report to schools who participate in MAP testing

which provides information about the school and the overall achievement of a grade level with students' individual scores.

Each Grade Report includes the term the assessment was given (e.g. Fall 2017–2018), the school district, the school, and the grade level represented in the data. In addition, the Grade Report lists the number of students who took the assessment, the mean RIT score for the grade level, the standard deviation, and the number of students at or above norm grade-level mean RIT. The first page of the Grade Report also lists the number of students at each range of percentiles (e.g. 21<sup>st</sup>–40<sup>th</sup> percentile) (See Appendix A for a sample of the first page of the Grade Report). The entire Grade Report also includes a list of students who took the assessment and their individual score on the MAP test. When collecting the data for this study, I asked that the divisions not provide me with the additional pages of the Grade Report as I did not need specific student scores. Not having this information also helped keep student information confidential. The first page of the Grade Report provided all the information needed for data analysis to compare the traditional PreK–5 students' academic growth with the sister-school model's student growth.

### **Data Analysis Methods**

From the first page of the “Grade Reports,” the Mean RIT scores were recorded in an Excel spreadsheet. For each school, the fall and spring Mean RIT scores were listed, and the amount of growth for each school of the six schools were calculated by subtracting the fall mean RIT score from the spring mean RIT score. Then the average (mean) of the amount of growth was calculated for both groups: traditional PreK–5 and separated PreK–2 and 3–5 elementary schools. The mean is “calculated by adding up the

scores and dividing the sum by the number of scores” (Efron & Ravid, 2013, p. 198).

Finding the mean is an important data analysis method because it is useful when comparing two or more variables (Efron & Ravid, 2013).

After the amount of growth data was averaged for both groups, the means of the data were averaged for both the traditional PreK–5 schools and the sister-school model schools. The growth means for both groups were represented in a bar graph. A bar graph was chosen because the “bars represent discrete data” (Efron & Ravid, 2013, p. 194). Representing data in a bar graph allows for the data to become easier to visualize any differences between the two independent variables.

After the data was averaged and represented in a bar graph, the statistical means of the two groups underwent two *t*-tests (*t*) for independent means to find if there was a positive, negative, or no relationship between the different grade configurations (Efron & Ravid, 2013, p. 204). Even though this study is a descriptive study, the two *t*-tests were conducted as an exploratory measure to examine if there was a statistical difference between the two grade span configurations tested. The *t*-test was chosen as the statistical test because it is best used with small sample sizes and could be used to determine if there was a relationship between third grade student growth on MAP tests and elementary grade spans.

### **Validity and Reliability**

After contacting NWEA and getting permission to see their reliability results, I was provided data from studies the company conducted to prove the reliability and validity of MAP tests. Through multiple tests in multiple states, they concluded that the MAP test was reliable. NWEA conducted test-retest reliability studies using over 500

student scores to determine their results. Since its reliability score is over 0.80, the MAP test is a reliable test (NWEA, 2018). The NWEA also conducted the content validity and criterion validity test on their assessments and concluded their test was valid. By collected and recording the data from MAP tests and conducting a *t*-test of the means of student growth from many different schools, there are not any foreseeable threats to the internal and external validity of this study (NWEA, 2018).

### **Limitations**

One limitation of this study is that the quantitative data collection method used, MAP testing, is only collected in the fall and spring. The MAP test was used as a data collection method because it is familiar to the me and used as a universal screener by many schools in the Commonwealth of Virginia. However, by using the MAP scores that are only collected twice a year, I might not have gained the full perspective of student academic growth.

Additionally, the quantity of data obtained and analyzed is a limitation. If more data was collected and increased collaboration was seen between sample schools, more scores and comparisons could have been studied to support conclusions. If there was a difference in student academic achievement between the two grade-span configurations tested, additional qualitative measures could be used in the future to determine a reason for the discrepancy. However, quantitative measures and MAP tests were used for this study strictly to determine if there was a difference in scores before applying qualitative measures.

Another limitation of this study could be my current positionality. As I recently changed school divisions, I currently am not working at any of the sample schools. Even



though from an outward glance, it may seem that I am now an outsider due to my new position in a different division, I would argue that I am still an insider. My new position gives me a broader educational view and the opportunity to see the differences between a traditional PreK–5 elementary school and my previous 3–5 elementary school. These broader educational views can still allow me to assist the superintendent from my previous school division. The two school divisions are neighboring small and rural divisions, and a close relationship can still be forged between me and my previous division.

Lastly, even though the schools were chosen based on similar demographics and locations, a limitation could be that the schools' differences could outnumber their similarities. The schools that were paired together have economic differences, differences in specific curricula taught, different teachers and teaching styles, and differences in programs offered at each school. These differences could be a limitation in concluding any results because even though they were paired based on many similarities, it is difficult to compare schools due to the unique characteristics of each school.

### **Chapter Summary**

This study was conducted to determine if there is a difference in academic achievement between traditional PreK–5 elementary schools and the sister-school model schools. This descriptive, quantitative action research study used MAP testing to compare six schools in the same state and represented the data without changing conditions. Once an IRB approval was granted, six schools, three traditional and three sister-school model schools, were contacted and asked to participate in the study. The six schools were placed in three pairs based on similar demographics and location in the

state. Of the six schools that were invited to participate, only four agreed to participate in the study. Once their approval was given, two years of MAP test was collected. The researcher conducted two *t*-tests to determine if there was a difference in academic achievement between the students at the sample schools from the two different grade-span configurations. I shared the results with all of the school systems that participated in the student and worked deeper with the school system I previously worked with to create a plan for students transitioning to the elementary school in third grade before, during, and after the transition to minimize transition effects.

## Chapter 4: Analysis of Data

Grade-span configurations and transition effects between schools is a topic that has been researched for many years (Clark, 2013; Combs et al., 2017; Cook et al., 2008; Cullen & Robles-Pina, 2012; Johnson, 2009; Rantin, 2017; Ryan et al., 2013; Wren, 2003). One grade-span configuration that has not been researched is the sister-school model elementary school where students attend a PreK–2 primary school and then transition to a 3–5 elementary school in third grade. Previous research studies have found that transitions can have a negative impact on student academic achievement the year students transition to a new school (Coladarci, T., & Hancock, 2002; Franklin, & Glascock, 1996; Rantin, 2016; Renchler, 2002; Schmitt, 2004). Additionally, some research studies have concluded that the larger the grade-span configuration of a school, the better students perform academically (Coladarci, T., & Hancock, 2002; Franklin, & Glascock, 1996; Rantin, 2016; Renchler, 2002; Schmitt, 2004).

The theoretical framework of this study consists of two educational concepts: transitions and communities of practice. Student transitions occur when a student transfers from one school to another school. Most commonly this occurs when a student transitions to a new school after completing all the grades at the previous school (i.e. students moving to middle school in sixth grade). Communities of practice is another theoretical concept that could explain the hypothesized drop in academic achievement during transition years. A community of practice occurs when teachers in the same school building work together towards the benefit of all students by collaborating and

communicating together. When students attend two different schools, like those who attend a sister-school model school, the teachers in those separate schools are not a part of the same communities of practice and do not necessarily collaborate or communicate together towards the benefit of all their students. This action research attempted to determine if transitioning effects and communities of practice between schools affects the academic performance of third grade students that attend these bifurcated sister-schools. The research question for this study was

What is the difference in student academic growth between a conventional (PreK–5) elementary school and the less common sister-school model with 2 schools, one primary (PreK–2) and one elementary (3–5)?

Six schools were invited to participate in this action research based on grade-span configurations through purposive and representative samples. A purposive sample is a sample that is chosen based on the purpose of the study (Efron & Ravid, 2012). A representative sample is a sample that is chosen because they have characteristics that match the purpose of the study (Efron & Ravid, 2012). Three schools were invited to participate by a purposive sample because they were bifurcated sister-school modeled schools that also administer the math MAP test to their students in third grade. Three additional schools were invited to participate in this study based on a representative sample because they were traditional PreK–5 elementary schools that had their students participate in the math MAP test in third grade and had similarities to the sister-school modeled schools that were asked to participate in the study. Of the six schools that were invited to participate, only four agreed to participate in the study and provided data. Neither of the two schools that choose not to participate communicated a reason for

declining; however, once the denial to participate was received, those schools were not asked to provide data.

The four schools that agreed to participate in the study, two traditional PreK–5 elementary schools and two bifurcated sister-schools, provided math MAP data for their third-grade students. The Measure of Academic Progress (MAP) test is a nationally normed, computer adaptive test that is used to measure student growth (NWEA, 2018). The test is given to students in both the fall and spring to calculate student growth from the school year.

The math MAP data that was collected from the four participating schools was graphed and compared to determine if there was a difference in the two different grade-span configurations. The data was displayed in data tables and bar graphs. Additionally, the data underwent two statistical analysis tests to determine if the data showed a relationship between the two different grade-span configurations tested in this study and the student academic growth on the math MAP test. In the remainder of this chapter, the data from the study will be presented and interpreted, general findings and results will be discussed, along with an analysis of the data.

### **Data Presentation and Interpretation**

Math MAP data from the four participating schools was collected and the information was organized in data tables and bar graphs. The data was recorded representing the two sister-schools' math MAP data on one data table and the traditional PreK–5 math MAP data on another data table. The averages of the amount of growth was calculated and that information was used to analyze the amount of growth using two *t*-tests.

The data in Table 4.1 shows the math MAP data collected from third grade students from both sister-schools that participated in the study. Schools 1A and 2A are both 3–5 elementary schools. Both 3–5 schools were able to provide MAP data from both the 2017–2018 and 2018–2019 school year. Each school year’s fall and spring third-grade scores were represented with the growth amount listed for that year. Additionally, the average of the two school years’ growth was calculated and is represented on the graph. Lastly, the average of the two schools’ growth average was calculated and is represented at the bottom of the table.

School 1A is a sister-school 3–5 elementary school and in the same school division as School 1B. The third-grade students at School 1A had a mean RIT score of 181.5 in the fall of the 2017–2018 school year on the math MAP test. In the spring, that same cohort had a mean RIT score of 188.8 on the same assessment. Their growth was 7.3 points for that school year. During the 2018-2019 school year, the third-grade students at School 1A scored a mean RIT of 181.3 on the math MAP test. In the spring of that school year, they received a 198.8 mean RIT score. Their growth that year was 17.5 points. The average growth of students at School 1A during the 2017–2018 and 2018–2019 school year was 12.4 points. It should be noted that during the 2017–2018 and 2018-2019 school year, School 1A had an average of 75 students in attendance in those third-grade cohorts.

School 2A is also a sister-school 3–5 elementary school and was able to provide two years’ worth of their math MAP data. In the fall of the 2017–2018 school year, their third-grade students scored a mean RIT score of 189.4 on the math MAP test. In the spring, those students scored a mean RIT score of 203.6. Their growth for the school

year was 14.2 points. During the 2018–2019 school year, the third graders at School 2A had a mean RIT of 189 on the math MAP test. In the spring, they scored a mean RIT of 201. Their growth was 12 points during that school year. The average growth of third-grade students at School 2A during the 2017–2018 and 2018–2019 school year was 13.2 points. The average growth between the third-grade students at School 1A and School 2A during the 2017–2018 and 2018–2019 school year was 12.75 points. During the 2017–2018 and 2018–2019 school year, School 2A had an average of 118 students in attendance in those third-grade cohorts.

*Table 4.1: Schools with Grades 3–5: 3<sup>rd</sup> grade student MAP scores on Math*

	School 1A		School 2A		
Fall 2017–18 Mean RIT	181.5		189.4		
Spring 2017–18 Mean RIT	188.8		203.6		
		2017–18 Growth 7.3		2017–18 Growth 14.2	
Fall 2018–19 Mean RIT	181.3		189		
Spring 2018–19 Mean RIT	198.8		201		
		2018–19 Growth 17.5		2018–19 Growth 12	
		<b>Average Two-Year Growth 12.4</b>		<b>Average Two-Year Growth 13.1</b>	
					<b>Average Two-Year Growth Schools 1A &amp; 2A 12.75</b>

The data in Table 4.2 represents the math MAP data collected from third grade students from both traditional PreK–5 schools that agreed to participate in the study. Schools 1B and 2B are both PreK–5 elementary schools. Both PreK–5 schools were only able to provide data from the 2018–2019 school year because both school systems had changed the nationally normed testing given to students in third grade. The growth between the fall and spring semesters was calculated and represented on the table. Additionally, the growth average from the two school’s is displayed at the bottom of the table.

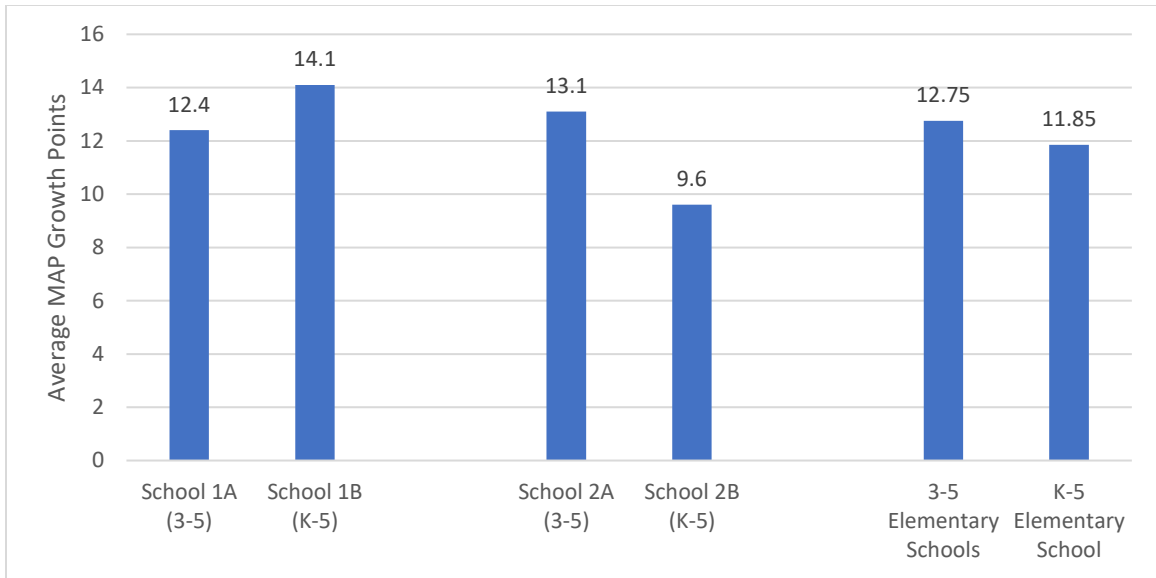
School 1B is a traditional (PreK–5) elementary school. During the fall of the 2018–2019 school year, third-grade students at School 1B scored a mean RIT of 188.8 on the math MAP test. In the spring of that school year, their third-grade students scored a mean RIT of 202.9, resulting in a growth of 14.1 points. During the 2018–2019 school year, School 1B had 50 students in their third-grade cohort. School 2B, which is also a traditional elementary school, had a mean RIT score of 188.7 during the fall semester of the 2018–2019 school year on their math MAP test. In the spring of that year, their students scored a mean RIT of 198.3. The third-grade students at School 2B had a growth score of 9.6 on their math MAP test. During the 2018–2019 school year, school 2B had 101 students in their third-grade cohort. The average growth between both School 1B and School 2B on their math MAP test during the 2018–2019 school year was 11.85 points.



Table 4.2: Schools with Grades PreK–5: 3<sup>rd</sup> grade student MAP scores on Math

	School 1B		School 2B		
Fall 2017–18 Mean RIT	No Data		No Data		
Spring 2017–18 Mean RIT	No Data		No Data		
		2017–18 Growth No Data		2017–18 Growth No Data	
Fall 2018–19 Mean RIT	188.8		188.7		
Spring 2018–19 Mean RIT	202.9		198.3		
		2018–19 Growth 14.1		2018–19 Growth 9.6	
		<b>Average Two-Year Growth 14.1</b>		<b>Average Two-Year Growth 9.6</b>	
					<b>Average Two-Year Growth Schools 1B &amp; 2B 11.85</b>

A bar graph can be used to show data in a way that is easier to visualize (Efron & Ravid, 2013). Figure 4.1 shows the average growth of students in third grade on the math MAP test between School 1A, School 1B, School 2A, and School 2B. The graph also represented the average growth comparing the two different grade-span configurations.



*Figure 4.1: Average MAP Growth comparing School 1A/1B and School 2A/2B*

School 1A and 2A are both 3–5 elementary schools, while both 1B and 2B are both PreK–5 elementary schools. Schools 1A and 1B grouping quality was that both schools are in the same school division. Those two schools were grouped together because they receive similar amounts of local and state funding and resources because they are in the same school division. Both schools 1A and 1B are fully accredited based on Virginia State Standards and they have some similar demographics. School 2A and 2B are both schools in very rural school divisions. They are from neighboring counties and were grouped together based on their rural population and similar demographics. School 2A is partially accredited based on Virginia State Standards, while school 2B is fully accredited.

Using all the data provided by both the two 3–5 schools, schools 1A and 2A, they have a mean growth rate of third grade students on their math MAP test over the 2017–2018 and 2018–2019 school year of 12.75 points. During the 2018–2019 school year,

schools 1A and 2A had an average growth rate of third grade student on their MAP test of 13.1 points. The two PreK–5 schools, schools 1B and 2B, have a mean growth rate of third grade students on their math MAP test during the 2018–2019 school year of 11.85 points. School 1A and 2A were able to provide two years' worth of data, while both school 1B and 2B were only able to provide one-year worth of MAP data.

Two statistical tests were conducted to determine if the difference between the two mean growth rates is a significant difference. Two *t*-tests (*t*) were conducted on the mean growth rates between the two different grade-span configurations to determine if the difference is a significant difference. Two *t*-tests were conducted to determine if there was a positive, negative, or no relationship between the two different mean growth rates between the different grade-span configurations (Efron & Ravid, 2013, p. 204). The *t*-test is an appropriate statistical test to conduct due to only two different grade-span configurations. Two different *t*-tests were conducted on this study. One *t*-test used all the 2017–2018 and 2018–2019 data collected, while one *t*-test only used the 2018–2019 data collected since not all schools could provide two years' worth of data. These two statistical analysis tests were used to determine if there was a relationship between students' academic growth in third grade on their math MAP test and the two different grade-span configurations tested in this study, a traditional PreK–5 elementary school and the nontraditional 3–5 sister-school.

### **General Findings/Results**

The data tables and the bar graph reveal that students who attend the two 3–5 schools that participated in this study have slightly higher levels of academic growth over students who attend the two PreK–5 schools that agreed to participate. However, after

conducting two different  $t$ -tests tests, it becomes evident that these results are not significantly different, and these results cannot determine if one grade-span configuration has a higher rate of academic achievement over the other.

Fraenkel et al. (2015) state that, “The  $t$ -test is a parametric statistical test used to see whether a difference between the means of two samples is significant” (p. 233). There are two different types of  $t$ -tests:  $t$ -test for independent means and  $t$ -test for correlated means. Since the two means being compared for this study were from two different grade-span configurations, the  $t$ -test for independent means was conducted. The equation for the  $t$ -test for independent means is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{(N_1 - 1)s_1^2 + (N_2 - 1)s_2^2}{N_1 + N_2 - 2}\right)\left(\frac{1}{N_1} + \frac{1}{N_2}\right)}}$$

Figure 4.2: Formula for  $t$ -test for independent means

For the first  $t$ -tests for independent means, all the growth data from the 2017–2018 and 2018–2019 school years was used even though two schools were not able to provide two years’ worth of data. After using the Social Science Statistics online  $T$ -test calculator to conduct the one-tailed  $t$ -test the results were  $t(5)=0.257$ ,  $p= .404$  ( $T$ -Test Calculator for 2 Independent Means, 2020).

For the second  $t$ -test, only the data from the 2018–2019 school year was used because all four schools were able to provide that data and I wanted to examine if that would make a difference in the outcomes. After using the Social Science Statistics online  $T$ -test calculator to conduct the one-tailed  $t$ -test the results were  $t(4)=0.816$ ,  $p= .250$  ( $T$ -Test Calculator for 2 Independent Means, 2020).

Fraenkel et al. (2013) recommends “to be statistically significant at the .05 rate, a  $t$ -value of at least 1.67 is required” (p. 234). Since both  $t$ -values, one comparing all of the data collected and one comparing the 2018–2019 school year data between the two different grade-span configurations, were less than  $t=1.67$ , the one-tailed  $t$ -tests determined there is no significant difference between academic growth of students between the two grade-span configurations studied. It is important to note that outliers could have been present in the data collected, but that information was not considered when completing these two statistical analysis tests.

However, both the  $t$ -tests yielded the result that there was no significant difference between the math MAP growth scores when comparing the two different grade-span configurations studied. The hypothesis for this research study was that students in bifurcated sister-schools would have less growth in third grade compared to students attending traditional PreK–5 elementary schools. These results show that the hypothesis is a null hypothesis and that there is not a significant difference between the academic growth of students attending these two different grade-span configurations.

### **Analysis of Data**

The purpose of this action research study was to determine if there was a difference between third grade students’ academic growth between a conventional (PreK–5) elementary school and the less common sister-school model with two schools, one primary (PreK–2) and one elementary (3–5). The data showed that on the math MAP test, students who attended the 3–5 sister-school model elementary school had an average growth of 12.75 points. The data also showed that students who attended the PreK–5 elementary school had an average growth of 11.85 points. These results were then

compared using two statistical analysis tests. Two *t*-tests were used to determine if the difference in the two grade-span configurations growth rate was significant. Both statistical analysis tests yielded results that showed that the scores were not significantly different and that there was a null hypothesis. Even though there was a slight difference in the average growth rate between the two different grade-span configurations tested, that slight difference was not a statistically significant difference. Therefore, it was concluded that students attending both grade-span configurations have similar growth rates in third grade despite transitioning effects and a difference in communities of practice for students who attend the sister-school modeled schools.

### **Chapter Summary**

After inviting six schools to participate in this action research study based on a purposeful and representative sample, four schools agreed to participate and provided data for the study. The four schools provided math MAP data, a nationally normed assessment given in the fall and spring to compare student growth. Of the four schools, two were traditional PreK–5 schools and two were 3–5 elementary schools. The four schools were paired together based on grouping factors.

The scores that were provided by the schools were recorded on data tables, Table 4.1 and 4.2, and a bar graph, Figure 4.1. A bar graph was used to visually represent the data collected. Figure 4.1 displays that there is a slight difference in students' academic growth between the two different grade-span configurations tested. However, two statistical analysis tests were used to determine if the difference was a significant difference. Two *t*-tests were calculated and both statistical analysis tests resulted in scores that determined there was not a significant difference in the student academic

growth rate between the two grade-span configurations tested. The results showed a null hypothesis and that there is not a significant difference in student academic growth of third grade students on their math MAP test between the students who attended the traditional PreK–5 elementary schools and the students who attend 3–5 elementary schools that participated in the study.

## Chapter 5: Conclusions, Interpretations, and Recommendations

Having taught and been an administrator in a 3–5 sister-school modeled elementary school, I became interested in understanding the negative discrepancy our third-grade students showed on their end of the year state assessment tests compared to our fourth and fifth graders. Having witnessed this discrepancy for five years, I started to hypothesize reasons for our lower test results in third grade and questioned whether it was connected to our status as a 3-5 grade level sister-school. In the United States, only 2.8% of elementary schools have this 3–5 grade-span configuration (NCES, 2018).

This study aimed to determine whether the low end-of-year state assessment scores our third graders were receiving on their state assessment was typical for students who attended these 3–5 bifurcated modeled elementary schools or if this was something unique to our third-grade students. The study looked to compare third grade student growth between students who attended the 3–5 elementary schools and students who attended PreK- 5 schools.

The research question for this study was the following:

What is the difference in student academic growth between a conventional (PreK–5) elementary school and the less common sister-school model with 2 schools, one primary (PreK–2) and one elementary (3–5)?

I hypothesized that the dip in third-grade end-of-year assessment scores we noticed at this 3–5 elementary school would be similar to the academic growth and scores of third graders in other sister-school modeled schools. The theoretical framework for



this study was based on transitions and communities of practice. Transitions occur the year a student transitions from one school to another, while communities of practice include groups of professionals who work together towards the best interest of students. Both theoretical concepts helped structure the hypothesis that there would be a difference in third-grade academic growth between students who attended the two different grade-span configurations based on students at the 3–5 schools transitioning to a new school and attending a new school with a different community of practice.

This study aimed to compare student growth on a nationally normed test, Measures of Academic Progress (MAP), between two different grade-span configurations. Of the six schools invited to participate, four elementary schools agreed to participate in the study and provided math MAP data for their third-grade students. Two of the schools that participated were PreK–5 elementary schools and two were 3–5 elementary schools. The data from the four schools were collected and organized in tables and graphs (see Tables 4.1, 4.2, & Figure 4.1).

After the data was collected and represented in tables and graphs, two statistical analysis tests were calculated. Two *t*-tests (*t*) were calculated using the data from the four participating elementary schools. The results concluded a null hypothesis and that there was not a significant difference in student academic growth of third grade students on their math MAP test between the two different grade-span configurations tested.

In the remainder of this chapter, the results will be further explained along with some limitations of this study and action research reflections. The results of this study will be connected and compared to the literature on grade-span configurations, transitions, and communities of practice research studies that were presented in Chapter

Two. Finally, based on these conclusions, I will list some practice recommendations, an implementation plan, and recommendations for future studies.

### **Study Results**

The third-grade fall and spring math MAP data was collected from four elementary schools that agreed to participate in the study. Two of the schools were traditional PreK–5 elementary schools and two were 3–5 elementary schools. After the data was collected, two *t*-tests were conducted on the data collected. One *t*-test was conducted on all the 2017–2018 and 2018–2019 school year data collected, while the other *t*-test was conducted on just the 2018–2019 school year data collected. Two *t*-tests were conducted because not all the schools were able to provide two years' worth of data. The *t*-test that examined all of the data collected concluded a result of  $t(5)=0.257, p=.404$  (*T-Test Calculator for 2 Independent Means, 2020*). The *t*-test that just examined the data collected from the 2018–2019 school year concluded a result of  $t(4)=0.816, p=.250$  (*T-Test Calculator for 2 Independent Means, 2020*). According to Fraenkel et al. (2013), both the *t*-tests results indicate that there is no statistically significant difference between third grade student academic growth on math MAP data between the two grade-span configurations tested. It is important to note that outliers and standard deviations were not taken into consideration when conducting these two *t*-tests.

Prior to this study, many studies had previously been conducted on grade-span configurations and transitions (Clark, 2013; Combs et al., 2017; Cook et al., 2008; Cullen & Robles-Pina, 2012; Johnson, 2009; Rantin, 2017; Rice, 1997; Ryan et al., 2013; Wren, 2003). Four of these studies showed a negative effect on student achievement when a student transitions to a new school (Cullen & Robles-Pina, 2012; Rice, 1997; Weiss &

Bearman, 2007; Wren, 2003). Transitioning occurs when students move or transfer to a new school. An extra transition occurs for students who attend these bifurcated elementary sister-schools in third grade.

Additionally, many researchers have found that schools with larger grade-span configurations yield students with higher levels of achievement (Bickel, et al., 2000; Coladarci, T., & Hancock, J., 2002; Franklin, & Glascock, 1996; Rantin, 2016; Renchler, 2002; Schmitt, 2004). When studying public schools, Franklin and Glascock (1996), Coladarci and Hancock's (2002), and Schmitt (2004) concluded that students who attended schools with larger grade span configurations yielded higher academic performance. Rantin (2016) conducted a similar study in a private school setting and also found that students who attend schools with larger grade span configurations yielded higher academic growth and performance.

Even though many studies have concluded larger grade span configurations do equate to higher student achievement, two studies found that larger grade span configurations have no impact or a negative impact on student achievement (Bickel et al., 2000; Dove et al. 2010). Bickel et al. (2000) found that students who attend larger grade span configuration have no significant difference in academic achievement as compared to students who attend schools with smaller grade-span configurations. The results of my study mirror the results of the study conducted by Bickel et al. (2000) since my study concludes that grade-span configurations have no significant impact on third grade student achievement based on the samples and results of math MAP tests.

Even though the results of this study yield that there is no significant difference between students' academic growth between the two different grade-span configurations

tested, there could be transitioning effects or community of practice effects that specifically hinder the third-grade student academic growth results at the elementary school in which I worked. Rice (1997) completed a study that looked at the transition effects on students as they transition from middle school to high school. Not only did Rice study the transitioning effects on student academics during the transition from middle school to high school, but also Rice looked at the educational impact this transition has specifically on students who are at-risk. Rice (1997) collected specific student demographic information in order to determine if this transition has a greater impact on students who are at-risk. Rice (1997) concluded that the transition from middle school to high school has an academic effect on every student. However, Rice also found that students who were deemed at-risk experienced a greater negative impact on academics as compared to students who came from a more stable and supportive home. The students who came from a more stable and supportive home transitioned easier to the new school setting. Rice's (1997) results could explain the negative academic impact the third grade students at the specific elementary school where I worked continue to see as the students transition to the 3–5 elementary school from the PreK–2 primary school, despite the results of this study since it is a Title 1 school and has a higher percentage of free and reduced lunch students. There is a high percentage of students who attend my former school who are deemed at-risk. Rice's (1997) study could provide insight to the disparity this school experiences during the transition.

In addition, this action research study did not research the amount of community of practices already implemented between the sister-school modeled schools that participated in the study. The other sister-schools that participated in this study could

already have higher levels of communities of practice set in place between their PreK–2 primary school and the 3–5 elementary school than the specific 3–5 elementary school where I worked which has not implemented a community of practice plan. Hulrey et al. (2018) found that when divisions support the improvement of communities of practice between educators and when professional development is given to assist in the understanding and importance of improving communities of practice, the communities of practice in schools improved. The lack of a current community of practice plan in place at my former school could also explain the discrepancy they experience in their students' academic progress despite the results of this study that show no significant difference between student academic growth between the two different elementary grade span configurations tested.

Due to the result that there is not a significant difference between student academic growth between the two different elementary grade span configurations tested, despite the decline in student academic growth in third grade students at this specific 3–5 elementary school, practice recommendations and an implementation plan were drafted and suggested to assist the specific 3–5 elementary school in hopes to support their students before, during, and after their transition to a new school.

### **Practice Recommendations**

This study concluded that there is not a significant difference in student academic growth between students who attend two different elementary grade span configurations. Similar studies have concluded the same results in their studies looking at different grade span configurations (Bickel et al., 2000; Dove et al. 2010). Despite the fact that this study, and others, concluded that there is not a difference in student academic growth

between two different grade span configurations during a transition year, the fact remains that the students who attend the rural, bifurcated 3–5 elementary school where I worked do have a decline in student academic growth the year students transition to third grade, and their students continue to have difficulty passing end of the year state mandated tests.

In the study conducted by Weiss and Bearman (2007), the authors found that there are transition effects that affect students changing schools; however, they suggest the effects are not due to the transition itself, but to other factors. Weiss and Bearman's conclusion that other factors could play into the decline in student academic progress the year after transition could help create a practice recommendation for the students transitioning to third grade at the 3–5 elementary school where I worked. Additionally, a study by Ryan et al. (2013) found that when students transition to new schools, they have a decline in intrinsic value. This noticed decline in intrinsic motivation could also help create practice recommendations for the students who transition to third grade at the 3–5 elementary school.

Based on the results of this study, results from similar studies, and conclusions made by Weiss and Bearman (2007) and Ryan et al. (2013), I believe there are a few practice recommendations I could suggest to schools who notice a decline in student academic growth during their transition year to a new school. It is important to note that creating an action plan for bifurcated sister-schools requires consideration for a complicated school system that takes into account multiple organizations and agencies. The action plan needs to include administrators at both the school and division level, teachers, school counselors, students, families, and community members.

The first recommendation would be to increase the communities of practice between the two schools. “Communities of practice are groups of people who share a concern or passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2015, p. 1). Hurley et al. (2018) found that strong communities of practice yield higher levels of student achievement. If the school division and school leaders work together to create a strong community of practice between the administrators and teachers of the two schools before the transition, this could help increase student academic growth for students transitioning to a new school.

Additionally, since Ryan et al. (2013) found that students experience a decline in intrinsic motivation the year they transition, this decline in intrinsic motivation could also affect student academic achievement. In the bifurcated sister-school elementary setting, students transition to a new school in third grade when students are usually about eight years old. Declining intrinsic motivation at the young age of eight could have some emotional effects for students as they transition to a new school. For schools who notice a decline in student academic growth during this transition, I would recommend the school counselors at both schools work very closely together to assist in emotional support before, during, and after the transition. Better preparing the students emotionally for this transition could assist students in increasing their academic growth.

Increasing the communities of practice between the PreK–2 primary school teachers and the 3–5 elementary school teachers and increasing the emotional support to students for the transition could both have positive effects on student academic growth during third grade. To successfully implement these recommendations, a detailed

implementation plan has been drafted and will be presented to both the school division and school leaders.

### **Implementation Plan**

For an implementation plan to be successful, there must be buy-in from all stakeholders. The 3–5 elementary school in central Virginia has invested time and resources into improving their third-grade scores on the end-of-the-year state mandated test after students transition to the elementary school in third grade. Additional professional development and reading and math interventions have been purchased in attempt to improve the end of the year testing results. These efforts have demonstrated there is buy-in for a solution to the low third grade scores. In addition to the school and division’s buy-in, there is also buy-in from parents. The parents in this division are always very concerned before their children arrive to the elementary school in the fall of third grade and believe the primary and elementary schools are very different and that it is a huge adjustment for students. When I was an administrator at the school, I had many conversations with parents every year who communicated the impact they felt when their children experienced transitioning to the new school in third grade.

Since there is buy-in within the division for recommendations, I will initially sit down with the division and school leaders and share the results of this study. The division was aware this study was being conducted—they provided data for this study and are awaiting the results. Like myself, some of them also hypothesize that the bifurcated sister-school model was the reason for the decline in end of the year state mandated testing scores for their third-grade students. After sharing the results that this



study found no difference between the two grade span configurations tested, I will propose two implementation suggestions to assist students' transition to third grade.

One of the implementation suggestions would be that the teachers and administrators from sister-schools plan to meet regularly to create a strong community of practice between the schools. The staff should meet to discuss student needs, curriculum, and how to prepare the students for the transition. The second implementation strategy would be that the school counselors from both schools work together to assist students before, during, and after the transition to help bridge the two schools together. One specific suggestion will be that the school counselors attend both schools regularly. This way students get to meet both school counselors and see familiar faces in both locations. Another part of this suggestion would be that the school counselors and administrators have at least one family meeting for second grade families to discuss the transition and ways families can help prepare the students for the transition.

Since this study found that there was not a significant difference between student academic growth in third grade between two different grade span configurations, the implementation plan is based on previous research findings and the theoretical framework of the study: transitions and communities of practice. As a former employee of the division, I unfortunately will not have the ability to ensure the implementation plan is implemented; however, I will offer to continue assisting the school leaders, teachers, and school counselors in implementing the proposed suggestions. Additionally, these implementation suggestions will be given to the other schools that participated in this study, and I will offer to meet with each of the school divisions to discuss the results and the proposed implementation suggestions for the 3–5 elementary schools.

## Action Research Reflection

Learning about and implementing an action research plan was a new concept when starting this process. Initially, I was more familiar with traditional research and had a hard time adjusting when first tasked with creating an action research study plan. However, after learning about and completing an action research investigation, I found that action research was the best method to use for the setting of my study. Action research should be used when an educator is studying a topic in their own setting in hopes to grow their knowledge and help improve student learning (Efron & Ravid, 2013).

This action research investigation was completed comparing two different elementary grade span configurations because I noticed in my setting that students at our 3–5 elementary school were not being successful on their end-of-the-year state mandated tests. This study aimed to find a solution for the decline in academic growth we noticed in hopes to improve student learning for the third graders at the school. I hypothesized that the decline in academic growth by our third-grade students at the 3–5 elementary school was due to the transition and lack of communities of practice between the PreK–2 and 3–5 sister-schools. The result of this study, which concluded that there was not a significant difference between the two elementary grade span configurations tested, was unexpected. It required deeper investigation into the theoretical concepts that shaped the study in order to come up with an implementation plan to assist the third-grade students at the school.

This study has provided personal and professional value as a result of its completion. Personally, the results will help improve the academic growth and achievement of the third graders at the elementary school where I witnessed the decline

in student academic growth and achievement. These results, along with the proposed implementation plan, will have a direct impact on those students. On the professional level, these results can be added to the results of previous studies of grade-span configurations and student performance. The result that there is not a significant difference between the two elementary grade span configurations tested can be used as a positive argument to continue with the sister-school model for the 2.8% of elementary school in the United States that are configured with the PreK–2 and 3–5 sister-school model (NCES, 2018). Even though these results can be used to defend the sister-school model because this study shows there is not a significant difference in student growth as compared to the PreK–5 elementary school, there are some design limitations and limitations to the results of this study that should be considered when discussing the results.

### **Study Limitations**

This study compared the difference in student academic growth between two different elementary grade span configurations by collecting and analyzing MAP data between four different schools: two PreK–5 elementary schools and two 3–5 elementary schools. There were a few limitations to the study that could have affected the utility of its results. The results of this study showed that there is not a significant difference between the academic growth of students between the two different grade span configurations tested.

One limitation of this study is that MAP testing was the only data collection method used. The MAP tests are given only twice a year, and even though it does show student growth, having more data points could have added to the depth of the data

collected. Similarly, only quantitative data was collected for this study. If different types of quantitative data or also qualitative data were collected, it could have added to the value of the conclusion which found that there was not a significant difference in student academic growth between the two grade span configurations tested.

Another limitation of this study is the sample size. Unfortunately, only four schools agreed to participate in the study and provide data. The four schools were placed in pairs based on similar demographics; however, the sample size was small, so caution should be used in generalizing the results of the study. Two of the four schools that participated were only able to provide one year's worth of MAP data instead of the two years of MAP data that was requested. Additionally, even though the four participating schools were paired based on similar demographics and locations, no two schools are exactly alike. Even slight differences between schools can make it difficult to compare schools due to the unique aspects of each school. These limitations should be noted, although they should not discredit the results of this study and the value they bring to the educational field. Additionally, based on these limitations, there are a few recommendations for future studies, which could add supporting value to the conclusions found in this study.

### **Recommendations for Future Studies**

Based on the limitations of this study, there are a few recommendations for future studies that could help support the conclusion this study found that there is not a significant difference in third grade student academic growth between the two elementary grade span configurations tested. There have been many studies completed on the effects of transitions, communities of practice, and different grade span configurations (Clark,

2013; Combs et al., 2017; Cook et al., 2008; Cullen & Robles-Pina, 2012; Johnson, 2009; Rantin, 2017; Rice, 1997; Ryan et al., 2013; Wren, 2003). However, this was the first action research completed studying the effects on third grade student growth between sister-school modeled schools where students transition in third grade to a 3–5 elementary school.

One recommendation for a future study is to increase the amount of data collected. This study collected only MAP data. The MAP test is only given twice a year to demonstrate student growth. Additional data could be collected to determine if the conclusions made in this study are accurate, or if more data shows a different result. Additional quantitative data could be collected to support the findings. In addition to MAP testing data, or another national normed assessment, future researchers could also look at student grades and end-of-the-year state mandated testing results to compare the two different elementary grade-span configurations tested in this study. Having multiple quantitative data sets from each participating school could offer more data to be analyzed that could support or oppose the findings of this study.

In addition to the possibility of future studies collecting additional quantitative data, qualitative data could also be collected. Qualitative data could be collected to study student intrinsic motivation and student emotions and feelings before and after the transition in third grade in the sister-school model. These qualitative data points could offer more insight to the students' feelings surrounding the transition to an elementary school in third grade from a primary school.

This study used MAP data from only four participating schools: two PreK–5 elementary schools and two 3–5 elementary schools. Future studies could collect data

from a larger sample size to help either confirm or oppose the findings of this study. Having a larger sample size could also equate findings that are more generalizable to other educational settings. Future studies could look at additional quantitative data points, qualitative data points, or having a larger sample size to determine if there is a difference in student academic growth between the two elementary grade span configurations while also determining if there is an emotional difference in students between the two grade span configurations. The results of future studies could help support or oppose the results of this study; however, more data is always useful in adding to the education field of knowledge which continues to change daily.

### **Summary**

This action research study aimed to determine if there is a difference in student academic growth between two different grade span configurations: PreK–5 and 3–5 elementary schools. Four schools participated in the study and MAP data, a nationally normed test, was collected from the sample schools. The MAP data from each school was inputted into data tables and graphs. The data went through two different statistical analysis tests and it was concluded that based on the data collected there is not a significant difference between traditional PreK–5 and the sister-school modeled school with grades 3–5. Based on the results, and information gathered from related literature, practice recommendations were created, and an implementation plan was created for the rural 3–5 elementary school in which I used to work.

Two specific practice recommendation were suggested. One of the recommendations was for the teachers and administrators from the sister-school modeled schools to collaborate more frequently to build a community of practice to help benefit

the students. The second recommendation was for school counselors from both sister-school modeled schools to work together to help support the emotional needs of students and families before, during, and after the transition to the 3–5 elementary school. To assist in implementation, I discussed that I will sit down with the building and division leadership at from both the PreK–2 school and the 3–5 school to discuss the recommendations and assist them in implementing the recommendations at their school.

This study did have a few limitations. One of the limitations was the amount of data collected. Another limitation was the sample size, as only four schools participated in the study. For recommendations for future studies, it was proposed that researches could increase sample size and the amount of qualitative and quantitative data collected in order to yield results that could be more generalizable. Despite the limitations of this study, this study still has value for the field of education by providing an additional study that shows transitions and grade span configurations do not significantly affect students' academic growth the year students transition to a new school.

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## Appendix A: Sample MAP Test Grade Report

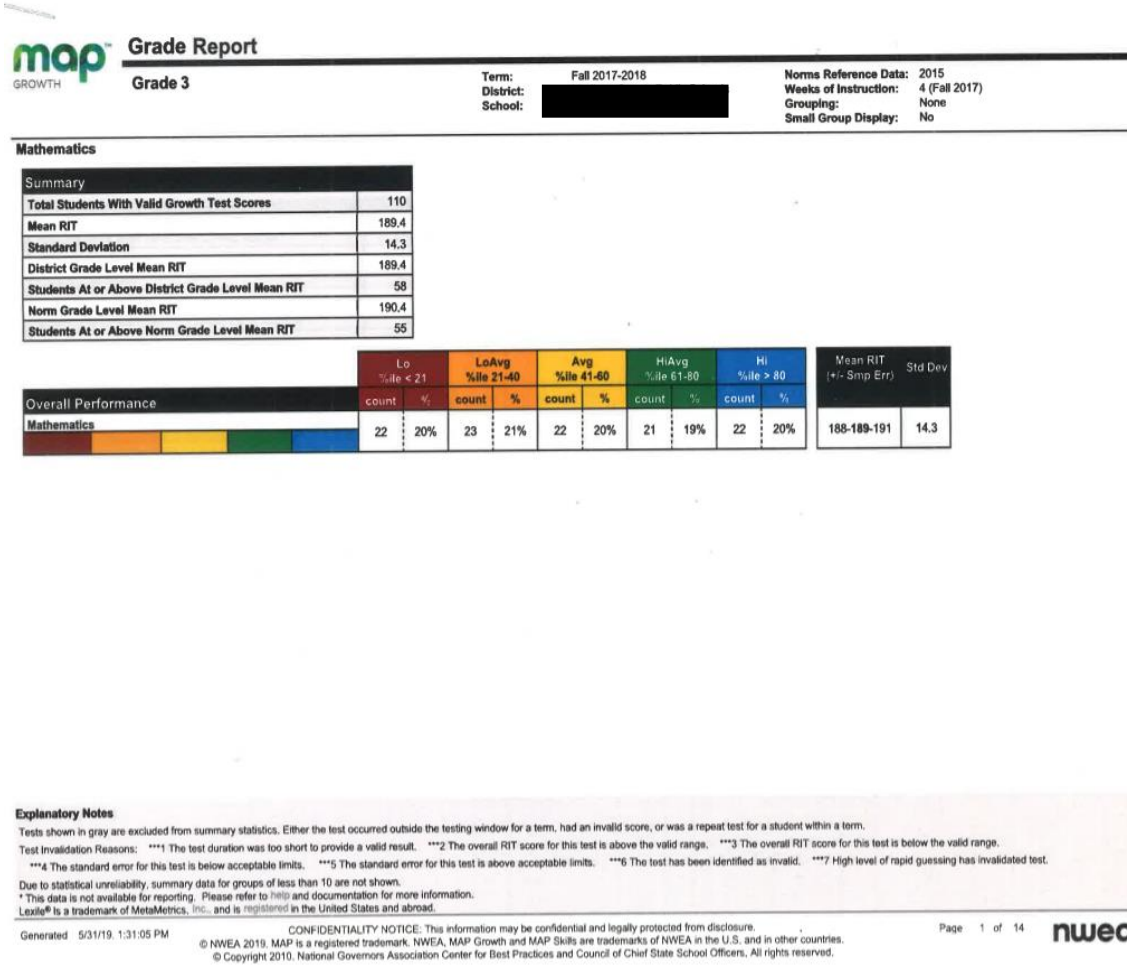


Figure A.1: Sample MAP Test Grade Report

The District Name and School Name have been redacted from this information to keep school and division confidentiality.

## Appendix B: Invitation Letter for School Participation

Dear \_\_\_\_\_ Elementary School,

My name is Victoria Gelbert. I am a graduate student in the Education Department at the University of South Carolina. I am conducting a research study as part of the requirements of my doctoral degree in Curriculum and Instruction and I would like to invite you to participate in the study.

This study will look at the differences between academic growth in students that attend traditional PreK–5 schools versus students that attend the bifurcated PreK–2 and 3–5 sister-school model. If you decide to participate, you will be asked to provide two years' worth of fall and spring MAP data from your second and third grade students.

Only the first page of the MAP Grade Report will be asked to be provided as only the mean score for the grade will be used for the study. I do not wish to collect the additional pages of the MAP Grade Report that have additional information in order to keep student names and scores confidential.

Participation is confidential. Study information will be kept in a secure location at the University of South Carolina. The results of the study may be published or presented at professional meetings, but the name of your school and district will not be revealed.

You will receive a copy of the findings for participating in the study to be used at your discretion.

I will be happy to answer any questions you have about the study. You may contact me at (571) 238-6981 or [vg5933@ccpsweb.org](mailto:vg5933@ccpsweb.org) or you may contact my faculty advisor at USC, Dr. Linda Silvernail at [Silvernl@mailbox.sc.edu](mailto:Silvernl@mailbox.sc.edu)

Thank you for your consideration. If you would like to participate, please contact me at the number listed below to discuss participation.

With kind regards,

Victoria Gelbert  
USC Graduate Student  
(571) 238-6981  
[Vg5933@ccpsweb.org](mailto:Vg5933@ccpsweb.org)