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A Quantitative Study on the Correlation Between Grade Span Configuration of Sixth Grade Students in Private Florida Schools and Academic Achievement on Standardized Achievement Scores

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A Quantitative Study on the Correlation Between Grade Span Configuration of Sixth
Grade Students in Private Florida Schools and Academic Achievement on Standardized
Achievement Scores

by
Deborah Rantin

An Applied Dissertation Submitted to the
Abraham S. Fischler College of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Nova Southeastern University
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Approval Page

This applied dissertation was submitted by Deborah Rantin under the direction of the persons listed below. It was submitted to the Abraham S. Fischler College of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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Statement of Original Work

I declare the following:

I have read the Code of Student Conduct and Academic Responsibility as described in the *Student Handbook* of Nova Southeastern University. This applied dissertation represents my original work, except where I have acknowledged the ideas, words, or material of other authors.

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Deborah Rantin

Name

July 26, 2016

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Abstract

A Quantitative Study on the Correlation Between Grade Span Configuration of Sixth Grade Students in Private Florida Schools and Academic Achievement on Standardized Achievement Scores. Deborah Rantin, 2016: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education. Keywords: grade span configuration, sixth grade, elementary, middle school, standardized testing

The applied dissertation was designed to investigate the three models of grade span configurations of sixth grade and the effects grade span configuration has on results of the standardized achievement scores of sixth grade students in private, Florida schools. Studies that have been conducted on sixth grade students and grade span configuration have provided mixed results on the impact of standardized scores. Exploration of the topic that supports the connection is outdated and current research has yet to examine the impact on students who are in private, parochial schools in Florida. The use of data from the TerraNova, Third Edition on grade span configuration has not been evaluated.

The correlation between grade span configuration and the results on the sixth grade student standardized achievement scores examines the following three models: kindergarten to sixth grade model (K6), kindergarten to eighth grade model (K8), and the sixth to eighth grade model (6-8, MS).

The researcher will use one standardized collection instrument to obtain data in the study and will collect data from Florida schools that administer the TerraNova, Third Edition to sixth grade students in the spring of 2015. Three grade span configuration models will be evaluated by the mean score of sixth grade student performance on the test. Mean scores will be requested by the researcher from the school administrators of private schools in Florida.

Table of Contents

	Page
Chapter 1: Introduction	1
Statement of the Problem.....	2
Background and Justification.....	3
Audience	5
Definition of Terms.....	5
Purpose of the Study	6
Chapter 2: Literature Review	8
Conceptual Framework.....	8
The Various Types of Grade Span Configuration: K-6, K-8 and 6-8.....	11
The History of Grade Span Configuration.....	13
Examining Grade Span and Fifth Grade.....	17
The Middle School Phenomenon.....	19
The Transitioning Effect.....	21
Professional Development of Teachers and Transitioning.....	26
Behavioral Concerns in Middle School	27
Academic Achievement and Grade Configuration Completed Research:	
No Correlation	29
Academic Achievement and Grade Configuration Completed Research:	
Significant Findings of Correlation	32
Private School and Grade Span Configuration	37
Research Question	37
Chapter 3: Methodology	38
Participants.....	38
Instruments.....	38
Procedures.....	39
Design	39
Data Analysis	40
Limitations	40
Chapter 4: Results.....	42
Chapter 5: Discussion	47
Results.....	47
Limitations	48
Recommendations for Future Research.....	49
Conclusion	51
References.....	53
Appendices	
A IRB Approval.....	58
B Box Plot of K6, K8, and MS	60

C	Summary for K6	62
D	Summary for K8	64
E	Summary for MS	66
F	Line Graph of Data	68
G	Scatter Plot of Data	70
H	Histogram of Standard Deviation	72

Tables

1	Case Processing Summary: The Number and Percentage of Florida, Private Schools Student Data Used in the Study from 2016 Terra Nova Tests	42
2	Test of Homogeneity Variances	43
3	Means and Standard Deviations: Total Score National Percentile by Grade-Span Configuration	43
4	Means and Standard Deviations 2: Total Score National Percentile by Grade-Span Configuration	43
5	ANOVA Results for Grade-Span Configuration	45
6	ANOVA Results for Grade-Span Configuration 2	45
7	Measures of Association	46

Chapter 1: Introduction

Education has been a topic on political agendas for decades and continues to be a concern for educators and parents alike. The continual ups and downs of governmental involvement in policy and whether states or national government should take ownership of the school systems can be a serious dilemma for the schools. The placement of sixth grade has long been discussed in numerous journal articles on topics such as behavior, achievement, and academics (Dove, 2010, Cook et al, 2008, Rockoff & Lockwood, 2010).

While governmental involvement in schools has evolved in such a way to take more ownership and control in the public school settings, it does not always pertain to private schools. Private schools can be described as a school funded by means other than the government, and can establish their own grade configurations. (Dove et al., 2008)

A private school is seen as a privilege to those who can pay the monetary tuition of the establishment. Research articles are primarily geared towards the public sectors to facilitate knowledge to the general population. However, for those in the private sector there is little to no data and research done on grade configuration pertaining to private schools.

In this research study, evaluating private schools allowed the researcher to have a variety of grade-span configurations and established a lesser gap in socioeconomic status that can often be a limitation. Through examining the TerraNova, Third Edition total mean scores of sixth graders in differing grade configurations, the researcher identified the correlation between grade configuration and academic achievement based on the end of the year assessment.

Statement of the Problem

The topic. The grade span configurations of private schools, exclusively sixth grade, can have a negative impact on students academically; specifically on standardized testing results. Keeping sixth grade in the elementary department level could benefit students overall and potentially add an advantageous aspect to standardized testing scores. Due to maturity, social factors, negative impacts on multiple transitions, and many other reasons linked to research there is a clear connection that is identified to the positive approaches to keep sixth grade in elementary or move toward a K-8 model.

The middle school structure that is commonly used, the 6-8 approach, is harming students in more way than just socially. Academic achievement that is lost during the middle school years takes place primarily for students in middle schools of 6-8 grade-span configurations. Socioeconomic factors can often make research limitations. Through examining private school data on the same standardized achievement test, the *TerraNova, Third Edition*, research was completed with less socioeconomic bias.

Research studies completed often use public data to conduct and answer research questions. The need to expand and serve the private market of schools, research needed to be organized to establish if the same problems in private middle schools take place as those in public middle schools. The middle school setting of 6-8 grade spans was reexamined in research settings for private schools.

The research problem. Including sixth grade into the elementary department level could help improve standardized testing scores of students in private school settings in Florida. The lack of maturity of students at that transitional time can result in negative consequences which can result in poor performance in various classes and overall success as a student (Bailey, 2012). The department structure and age of students as they

transition from a grade level and potentially to new schools can determine the academic success in sixth grade and years to come. The research problem is, does the grade configuration of sixth grade students in private schools have an effect on academic success on standardized test scores?

Background and Justification

Nationally, schools have changed departmentally in a rapid pace. As identified in the article, *Stuck in the Middle*, public schools have moved away from Kindergarten to Sixth Grade structure and Kindergarten to Eighth structure since 1970 due to overcrowding and financial reasons. "From 1987 to 2007, the percentage of public-school 6th graders in K-6 schools fell from roughly 45 percent to 20 percent." (Rockoff & Lockwood, 2010) The problem with this shift in grade span is that it is not done because of educational philosophical research or for academic success. Instead, "the exigencies of geographic location, student populations, limited financial resources, and community preferences, among other factors, may often dictate the grade spans within a school system, hence the wide range of different grade configurations across the nation" (Renchler, 2000, p. 1).

In recent years, "policy makers nationwide continue to wrestle with the basic question: At what grade level should students move to a new school?" (West, 2012, p. 63) In the study, by West, he challenges the Rockoff study done in the New York area. Instead, West examines public schools in Florida to see if there was a difference demographically. In both research articles, public schools were examined. The lack of research on the topic continues as there is not one answer specific to the structure of department. Furthermore, both of these studies examine

the public school setting. The private school setting has not been researched or examined in terms of grade configuration and how grade configuration can have an influence of academic achievement; specifically related to achievement scores.

Deficiencies in the evidence. There was a clear lack of research in regards to private schools. The issues that most middle school administrators and middle school teachers face in regards to academic and behavioral concerns of students was addressed in many journal articles (Alspaugh, 1998, Anderman et al, 1999, Elias, & Shneider, 1998, Gutman & Midgley, 1999, Rudolph, 2001, Schmitt, 2004, and Yecke, 2010). However, there was not a clear consensus on the best method or specific results. Recent research completed also had various findings that conflict each other in the data that states the possible reconfiguration of the grade levels could have a negative effect on academic achievement. The articles that did mention the possibilities of the academic advantage to keeping sixth grade in the elementary are older and research needed to be updated; such as Rudolf and Schmitt. Transitioning to middle school is difficult at any age. In the article by Bailey, many elementary 5th grade school students were anxious or nervous about the transition to middle school (2015). A dissertation by Schaffer (2010), examined the academic achievement correlation of sixth graders and grade span configuration using Florida Comprehensive Assessment Tests. However, each of the articles in the literature had one thing in common, only data from public schools was used.

There was little to no data or evidence given for the private school settings on the topic of grade span configuration, allocating grades to a specific level. Meaning, researchers had focused on large public school settings to determine if grade configuration played a part in academic success of students. Differing grade span configuration is most common in elementary grades, being kindergarten to fifth grade.

The most common grade span configuration for middle school being sixth grade to eighth grade. However, the research collected for this study on grade span configuration and academic success did not scale down the aspect of specific type of school nor did it include private schools. In addition, the research was conflicting depending on the populations chosen.

Another deficiency in the evidence was clearly identified through the search of the current Nova Southeastern University database of dissertations. When a search entered for grade span configuration took place, there was one dissertation match from 1992, and the paper found from the search did not focus on grade span configuration and the effects that it has on the sixth grade learners specifically or on end of the year assessments.

Audience

The audiences this research will benefit are school board members, school superintendents, and administrators who would have the authority to restructure a school's grade span configuration. Teachers and parents of transitioning elementary students can also benefit from this research because they could choose a school with the best grade span configuration for academic success and structural framework, based on the research, in an effort to ensure better testing scores for their students.

Definitions of Terms

Achievement Testing. This "type of test is an objective and standardized method for estimating behavior based on obtaining a sample of that behavior" (*Testing in American Schools, p.176, 1992*).

Grade Span Configuration. "The range of grades that a school comprises" (Coladarci & Hancock, 2002, p. 2). Grade span configuration also reflect the number and

range that a specific school may use within the school itself (Cullen & Robles-Pina, 2009).

K to 6 School. A school labeled as an elementary school. This type of school begins enrolling students at age five in kindergarten and promotes students after completion of the sixth grade.

K to 8 School. A school that enrolls students beginning at age five in kindergarten and promotes students to high school after completion of requirements for content areas.

Middle School (6-8). A school with a grade span on grades sixth through eighth grade. After completion of academic requirements, students advance into high school.

Scale Score: Measure of student results on the TerraNova, Third Edition in content areas ranging from 100 to 500 points at each grade level.

Parochial. A school with a religious background.

Private School. A school that is financially sustained by monetary donations and tuitions; no government funding.

ACSI. Accredited Christian Schools International.

TerraNova, Third Edition. A standardized achievement test. “A full battery of constructed-response and selected-response test items provides detailed diagnostic information on students' basic and applied skills.” (2015)

Transition. A transition in regards to education is any time a student moves from one school to another.

Purpose of the Study

The purpose of this study is to examine the 6-8, K-6, and K-8 models of elementary and middle school grade span configuration to identify which design is more

effective for the academic success of sixth grade students, based on a standardized test scores in private schools in Florida.

Chapter 2: Literature Review

Scholarly research has an over abundant amount of research pertaining to the negative aspects of middle school age students. From academics to behavior, scholars debate over middle school age issues. This study examines the possibility that the reason middle school students struggle is due to grade-span configuration. The research identified in the study examine the many concerns and differences in research and grade-span configuration.

Conceptual Framework

This Constructivism Theory was originally developed by Jean Piaget in 1936 and translated to English in 1952; primarily to be used in the study of how learners develop their knowledge in education and construct that knowledge on their own; learning is also affected by social surroundings (Doolittle, 2014). The theory of Constructivism indicates that "learning from this perspective is viewed as a self-regulatory process of struggling with the conflict between existing personal models of the world and discrepant new insights, constructing new representations and models of reality as a human meaning-making venture with culturally developed tools and symbols, and further negotiating such meaning through cooperative social activity, discourse, and debate." (Fosnot, 1996)

Psychological and social learning take place through all that students are taking in on a daily basis; students are responsible for their learning (Doolittle, 2014). Students develop academic and social skills during the interactions that take place throughout their lives and Piaget believed that there are specific stages and ages that this takes place. Candella explains, through her research, the importance for educators to understand the Constructivism Theory when teaching (1994). Therefore, in examining the age of transitioning students into middle schools, educators should be applying the theory to

practice. One must decipher if the age at which various American schools are transitioning students into middle schools is detrimental to their development cognitively and socially (Gunter, 2010).

The self-regulatory process described by this theory requires a need to internalize and think critically through one's surroundings and challenges of life and learning. This process happens in stages. Four stages, defined as the Theory of Constructivism. Each stage corresponds with an age range. The stages are Sensorimotor Period, birth to two years old; Preoperational Period, 2 to 7 years old; Concrete Operational Period, 7-11 years old; and Formal Operational Period, age 11 to adulthood. The maturity of each takes place at his own rate. Biological, psychological, and social challenges are factors that are all associated with the middle school age years (Lord, et al., 1994).

The importance of these stages can have a distinct correlation to grade span configuration and the way teachers and students relate to one another. Cook (2008, p. 106) describes the difference in how teachers of various levels tend to teach students.

The middle school educational environment is different from the elementary school environment in several ways. A sixth grader in an elementary school will typically be assigned to one teacher and spend much of the day in that teacher's classroom with the same group of students. A sixth grader in middle school will typically be assigned to a team of teachers and move from classroom to classroom over the course of the school day, with somewhat different groups of students in each. Middle schools place greater emphasis on discipline and academic accomplishment, with less opportunity for close relationships to specific teachers.

The United States school year begins in August. Schools used to begin right at or after the harvest. Recalling that the agricultural lifestyle and economy was the way of life in that era, schools kept children occupied and learning during the winter months. With that in mind, students would have started school closer to January. By establishing August as the starting month of school, some students gain an advantage in age over others born after January. This month, as the start month of school, means students entering sixth grade are potentially 10-11 to start and will turn 11-12 at some point throughout the year. Should a transition of students take place at this age, in regards to the constructivist approach, students would be moving to a new environment and would need to adapt to a new way of learning right at the end of the Concrete Operational Period (Hemmelgarn, 2011).

Manning (2002), notes in his article, the need to revisit and rethink the Concrete Operational Period in middle school because students are not reaching this period at the same time.

Cognitively, many young adolescents begin to develop the ability to make reasoned moral and ethical choices. Similarly, depending on their developmental rate, they begin to think hypothetically, abstractly, reflectively, and critically – what Piaget termed as progression from the concrete operations stage to the formal operations stage. Still, middle level educators, in their efforts to address adolescents' cognitive development, should understand (and plan accordingly) for considerable cognitive diversity. Since all young adolescents do not reach the formal operations stage at the same time, educators should avoid over-challenging late developers to think beyond their capacity. (p. 226)

The dilemma with what Manning is expecting of educators, in regards to Piaget's concrete versus formal operation periods, is that due to the current structure of middle schools and the governmental involvement, teachers are being required to teach students in a manner that often middle school students cannot grasp. "Middle level advocates recognize the tremendous progress made during the last several decades, but they also realize that middle level schools continue to face challenges."(Manning, 2002, p.227)

The Various Types of Grade Span Configurations: K-6, K-8, and 6-8

Grade span configuration, defined as, "The range of grades that a school comprises". (Coladarci & Hancock, 2002, p. 2) Grade span configuration also reflects the number and range that a specific school may use within the school itself (Cullen & Robles-Pina, 2009) The Digest of Education Statistics 2013 (2015), describes the grade span of elementary and secondary schools as follows,

The U.S. system of education can be described as having three levels of formal education (elementary, secondary and postsecondary). Students may spend 1 to 3 years in the preprimary programs (prekindergarten [PK] and kindergarten [K], which may be offered either in separate schools or in elementary schools that offer higher grades. Following kindergarten, students ordinarily spend from 6 to 8 years in elementary school. The elementary program is followed by a 4- to 6- year program in secondary school... Education at the elementary and secondary levels is provided in a range of industry settings – including elementary schools (preprimary schools, middle schools, and schools offering broader ranges of elementary schools; secondary schools (junior high schools, high schools, and senior high schools); and combined

elementary/secondary schools – that vary in structure from locality to locality. (p. 11)

While it may seem vague in the description, the exact specification of grade assignment in terms of grade span configurations, in regards to elementary schools and junior high or middle school schools, can be difficult to understand because there are so many variances of these commonly used terms. “Despite numerous modifications, rarely has there been widespread or consistent satisfaction with the forms of middle school grades.” (Weiss, 2006, p. 240) Most public and charter schools are held to specifications by the government, but that does not always apply to grade span configurations. In many of the studies conducted, researchers examine students in various grade span configurations of public schools.

Written work by John Lounsbury echoes the lack of a set grade span configuration when he writes that the establishment and longevity of trying to create a working grade span configuration is the, “longest-running, most extensive educational reform movement in the United States.” (Lounsbury, 1991, p.68) While grade span configuration of the 50s and the 60s reflected a K-6, 7-9, and 10-12 model as the norm, it did not take long for the baby boomer population to reach grade school ages. Soon, overcrowding caused schools to shift the configuration of grades in order to facilitate for the growing population. The 70s and 80s brought a new grade span configuration that is most commonly used to this day; K-5, 6-8, and 9-12 (Craig, 2006).

Reflected by the Digest of Education Statistics, “Since the early 1970s, public school systems have shifted away from the junior high schools (schools consisting of either grades 7 and 8 or grades 7 to 9) and moving toward middle schools (a subset of elementary schools beginning with grade 4, 5, 6 and ending with 6, 7, or 8) (p. 67, 2015)

At that time, educators felt like the shift to middle schools would be generally a good move for the students of those middle age levels of adolescents, however it was not undisputed.” (Valentine, 2002).

While the current K-5, 6-8, and 9-12 grade span configuration model may be the most common, it does not eliminate other grade span configurations that public and private schools utilize currently. Johnson et al specifies some of the countless options when reviewing grade span configurations of schools today. “There are a number of grade span configurations across the United States, which include elementary models of K-5, K-4, K-3; middle school models of 5-8, 6-8, 7-8, and 7-9; and high school models, which include 9-12 and 10-12.” (Johnson, 2015, p. 32).

The research focuses on the three most common grade span configurations for sixth grade students specifically to examine the academic achievement of that population. “Today, the most common grade-span configurations are K-5, K-6, 6-8 or 7-9 and 9-12, with the popularity of each configuration varying according to locale.” (Howley, 2002) The K-6, K-8, and 6-8 are current models for students in the sixth grade and vary from school to school in both public and private sectors. Before conducting a study on grade span, one must first understand how these particular grade span configurations came to be. Through a series of population growth and policy, research of the history of grade span configuration can be exceedingly informative as to the examination of why this topic is so vastly important to the academic society (Dove, 2010).

The History of Grade Span Configurations

The development of grade span configuration grew as the American population grew (Cook, 2008). “The exigencies of geographic location, student populations, limited financial resources, and community preferences, among other factors, may often dictate

the grade spans within a school system, hence the wide range of different grade configurations across the nation.” (Renchler, 2002, p. 1) It is not at all a secret or surprise to educators that there is little strategy in regards to academics when altering grade spans. “Configuring schools by grade is a practice influenced by history, psychology, sociology, and pedagogy. With all of these social sciences to draw on for knowledge and direction, configuring schools remains a process with inexact guidelines.” (Seller, 2004, p.2)

The framework of school systems has changed over time and due to the shifting funds and policies of the Department of Education. Dove, Pearson, and Hooper describe a chronological timeline of that shift in school configuration moving from a one-room schoolhouse, to first through eighth grade and high school, to a need to implement a junior high school to facilitate the population growth, and finally to include sixth grade into middle school (Dove et al., 2010).

While the Office of Education began specifically to gain information and statistics, like most governmental involvement, the role of the Department of Education soon took on a much larger role. The collection of funding began in the 1960s with President Johnson. (US Department of Education, 2010). “The American middle school made its debut in early 1960s as a modification of the traditional junior high school, which housed grades 7, 8, and sometimes 9 in an environment designed to prepare students for greater rigors of high school.” (Yecke, 2005, p.2)

School models began with a simplistic beginning. Grade span configuration started with the one-room schoolhouse model. Most would agree that this model is inefficient in today’s robust society. Educational requirements have expanded on and surpassed just rudimentary reading, writing, and arithmetic. This model was used to serve

the smaller communities of that period; mostly agricultural. Agriculture was the large source of wealth for the nation during that time (Seller, 2004).

Historically, many children in that era worked and did not make it very far in school before their parents required their time, to help on the farms. For that reason, the first, more common grade configuration after the one-room schoolhouse was a first to twelfth grade (Howley, 2002). Howley continued that after World War I finished and the economics of the country increased, the roads became better paved and efficiency increased over time. For those reasons, the existence of the smaller schools slowly became ineffective and K-12 schools also began to close so that schools could focus on specific grade levels. Schools needed to become more efficient in order to handle the new demands of the next generations (Howley, 2002).

By the 1970s, the government took an even larger and active role in American education hoping to bridge the gap between poverty, gender, minorities, and disabilities. It was not until 1979 that Congress passed the Department of Education Organization Act. By 1980, the Department was actively functioning (US Department of Education, 2010). “In the 1980s, however, middle schools were hijacked by those who saw them not as places for systematic teaching and purposeful learning but, in the words of one prominent middle school activist, as “the focus of social experimentation.” (Yecke, 2005, p.2)

The next grade span configuration that emerged was the first through eighth and ninth through twelfth grade span. At the beginning of the 20th century and on through to the middle of the century, another shift took place in grade span configuration. Seventh and eighth grade were added to a separate level of school and given the name junior high (Cook, 2008). The junior high level was intended to be a more rigorous transition to

prepare students for the high school years to follow (Juvonen, 2004). Following the junior high grade span, schools again moved to another configuration adding sixth grade into junior high and renaming the grouping of students, middle school (Cook, 2008).

“For more than three decades, American public education embraced this organizational model. Between 1970 and 2000, the number of public middle schools in the U.S. grew more than sevenfold, from just over 1,500 to 11,500. These new middle schools displaced both traditional K-8 primary schools and junior high schools. From 1987 to 2007 the percentage of public-school 6th graders in K-6 schools fell roughly 45 percent to 20 percent.” (Rockoff & Lockwood, 2010, p.69) It was during this time period that the education of today was shifted to reflect something entirely different. In 2002, No Child Left Behind became a law. With this taking place, the federal government became the overseer of all thing education. The states became accountable to the federal government (Dove et al., 2010).

Accountability came in the form of standardized testing. Testing became the most important defining factor at that moment and testing continues to be the key determinant in the education arena (Coladarci & Hancock, 2002). Through the shift in grade span configuration the next decades would be defined by the educational rigor known as middle school. The article, *Mayhem in the Middle* by Yecke (2005, p. i), gives, even more, insight

Ironically, the radical middle school concept reached its zenith in 1989, the same year as the Charlottesville education summit convened by President H.W. Bush set in motion a reform sequence that would doom that very concept. This summit famously launched the nationwide standards and accountability movement that put an unprecedented

premium on student academic achievement, the very thing that radical middle schools activists spurned.

What is now the common middle school grade span configuration, consisting of 6-8 grade students, is the topic of much debate over whether or not housing our young adolescent students in one school building is actually beneficial academically, socially, or behaviorally (Carolan, 2015; Cook, 2008; Rockoff, 2010; Rudolf, 2001). Hough suggests that the United states gear away from the middle school grade span configuration altogether and move towards a full K-8 model (2005).

Examining Grade Span and Fifth Grade

There are some schools that have fifth grade students who are currently in a grade span configuration of middle school. The research completed in, *The Relationship between Grade Configuration and Standardized Science Test Scores of Fifth-Grade Students*, was completed primarily because other articles were inconclusive in findings. The problem for the authors to identify was, what was causing the deficits in fifth grade student science standardized testing scores. “Are grade level configuration and student achievement in science related? The hypothesis was that school grade-level configuration and the “met standard” on the fifth-grade Science TAKS are related.” (Johnson, 2015)

Standardized testing scores for the science content area were collected from two schools by examining the TAKS scores. The grade configuration and test scores were examined together to analyze performance. In this study, researchers found that there was a clear increase in standardized testing scores for students who were in the elementary level versus students in the middle or junior high level. Scores did show some variations, and, therefore the authors caution school administrators before jumping to a reconfiguration automatically. This study showed that through examining schools with

differing grade configuration established, it was clear to see a distinction of student achievement for students in the elementary school setting through the use of standardized testing scores (Johnson, 2015).

Similarly, *Academic Achievement for Fifth-Grade Students in Elementary and Intermediate School Settings: Grade Span Configurations* suggests there are variances in the literature that show inconsistency between grade configuration and achievement. The problem identified in this article is the difference in grade configuration for math and reading score achievements. There are two research questions for the article which were: “What is the difference in Grade 5 students’ levels of reading achievement between elementary campuses and intermediate campuses for 5 academic years, 2003-2008?” and “What is the difference in Grade 5 students’ levels of mathematics achievement between elementary campuses and intermediate campuses for 5 academic years, 2003-2008?” (Combs, et al. 2011, p. 15)

Schools were placed into two separate categories, K through fifth grade and intermediate (fifth through sixth grade). Schools were match based on Clark’s distance based formula. As quoted by the authors, “Clark’s (2009) distance-based procedure contains the following five steps: (a) select the matching variables, (b) identify and account for any missing data, (c) standardize the matching variables; (d) find optimal matches for each target school, and (e) validate the matching procedure.” These steps were used to collect the data for this study (Combs, 2011, p.16).

The results of the study conducted were similar to others where the researcher found momentous increase of scores for students in fifth grade that were in the elementary setting versus students in the fifth grade in the intermediate setting. In both content are of reading and mathematics, based on standardized testing scores and through

the process of data collection and matching it was obvious that students benefitted greatly from being in elementary school in fifth grade. With that in mind, it seems important to note that if students were able to stay in that structural grade configuration one more year that the sixth grade students would benefit on testing as well (Combs, 2011).

In both research studies for fifth grade in terms of achievement, the researchers concluded that fifth grade students in the elementary department level performed better than those in the middle school level. The significance of this study can be noted when examining the middle schools. Middle schools are currently seen as one of the hardest grade levels to teach

The Middle School Phenomena

During the 1900s, middle schools began to emerge from those of elementary schools. The reasoning behind these middle schools initially was to encourage that generation to continue on with their education. Furthermore, in the 1970s, middle school grade span configuration continued in the 6-8 model in order to group adolescents together. The current generation, however, has seen negative effects from this middle school grade span configuration. Students are disengaged and feel alienated from those around them (Juvonen, 2007). As cited in Juvonen (2007, p. 198), “the Carnegie Corporation’s Council on Adolescent Development (1989) concluded that, ‘a volatile mismatch exists between the organization [and curriculum] of middle grades schools, and the intellectual, emotional, and interpersonal needs of young adolescents.’ ”

A question posed by Cook in his research is, “Why is the current generation of sixth grade students in middle school while their preceding generations attended elementary school?” (2008, p.105) Growth in population and overcrowding were the primary reasons for the shift in grade configuration (Cook et al., 2008). “Grade span

configuration was part of a new paradigm for middle grade education that moved away from the ‘bridging’ concept, toward focused consideration of the unique challenges faced by young teens.” (Cook et al., 2008, p.105)

Over the years, a norm has developed to keep sixth grade students in middle schools. According to George, “implementing middle schools in Florida, a process that began in the late 1960’s and continued for the next three decades.” (George, 2009, p.9)

With titles like, *The Negative Impacts of Starting Middle School in Sixth Grade*, *Mayhem in the Middle*, and *The Middle School Plunge* being just a few of the research articles found when researching middle schools, there is no concealing the fact that educators and scholars are demanding attention be turned to the American middle schools. Middle school students have shown lack of improvement and major drops in academic progress and success academically once they reach middle school. Math and English test scores drop drastically for students who make the transition to middle school in sixth grade (Rockoff, 2010).

The research hypothesis proposed by the article, *Stuck*, is, “When students move to middle school, their academic achievement falls substantially relative to that of their counterparts who continue to attend a K-8 school.” (Rockoff, 2010, p. 70) The “study was based on data for New York City school children who were in grades 3 through 8 during the 1998–99 through 2007–08 school years. We were able to follow students who entered 3rd grade between the fall of 1998 and the fall of 2002 for six years, until most had completed the 8th grade.” (Rockoff, 2010, p. 70)

The research completed, reflected both qualitative and quantitative data. Test scores demonstrated the quantitative data analysis, while specific grade configuration questions were answered to identify how schools were organizing their students.

Developmental psychologists have shown that adolescent children commonly exhibit traits such as negativity, low self-esteem, and an inability to judge the risks and consequences of their actions, which may make them especially difficult to educate in large groups (Rockoff, 2010).

The Transitioning Effect

Middle school has challenges as mentioned above, but by far, one of the hardest trials that students face when entering middle school is the transition to a new school. There are innumerable amounts of research on the academic decline of students due to transitions (Alspaugh, 1998, Anderman et al, 1999, Elias, & Shneider, 1998, Gutman & Midgley, 1999, Rudolph et al., 2001, Schmitt, 2004, and Yecke, 2010). “No matter whether students enter a middle school in the 6th or the 7th grade, middle-school students experience, on average, a large initial drop in their test scores.” (Rockoff & Lockwood, 2010, p. 72)

Specific socioeconomic status and ethnicity can have a direct link to the transitioning effect on academic achievement (Lord, Eccles, & McCarthy, 1994; Gutman and Midgley, 1999). In the article, *Surviving the junior high school transition*, Lord, Eccles, & McCarthy examine the factors that can have an effect of young adolescent students moving into junior high schools. The procedure the authors used were, “Questionnaires containing indicators of large number of theoretical constructs were group were group administered to the early adolescents in their math classrooms during the fall and spring of their sixth- and seventh-grade school years. Administration took two class periods. At the same time, the teachers filled out a rating form for each participating student; this form asked the teachers to rate each child on several

characteristics including how well they were performing as compared to other students in the class.” (Lord, Eccles, & McCarthy, 1999)

Self-esteem, self-esteem and gender, how well students liked junior high, and the students’ parents rating of student adjustment, and teacher ratings of the students were all evaluated in the study. In regards to self-esteem and academics, the students who had positive changes in self-esteem did better academically (Lord, Eccles, & McCarthy, 1999). The authors found that male students had a higher positive self-esteem than that of the female self-esteem. Over time the male students steadily increase in feelings of self-esteem (Lord, Eccles, & McCarthy, 1999).

Gutman and Midgley define academic achievement and success by grade point average of students in their research (1999). The population that was evaluated on grade point average were poor, African American students. The transitioning time period was during that of the middle school years. The research also takes into account family factors and psychological factors that could also impede upon the grade point average of students. The authors suggest that previous research conducted on the African American students of low socioeconomic status have focus almost solely on the family factors that face the students. In their research study, the authors focus more on the social atmosphere, teacher perspective, and environmental factors that take place within school (1999).

In concluding their study, the pair discovered that much like research completed before their study, the African American students of poorer communities also saw a negative impact in achievement during the transition from elementary to middle school. The difference in the study complete by Gutman and Midgley was the socioeconomic factor. The study focused not only on the ethnicity but also on the average income and

factors that arise due to the lack of income (1999). While the results did not seem alarming because of the socioeconomic status of these students, the same damaging effects of transitioning from elementary to middle school can be seen in many settings nationally.

In, *Negotiating the Transition to Middle School: The Role of Self-Regulatory Processes*, Rudolf et al. specifies the difficulty students have with transitions by discussing research of the past. The authors state, more than just academic functioning is affected by the transition to a new school. The research work analyzed by the author find clear connections to disturbing effects of transitioning students too early. Three goals were mentioned in the study to identify the serious circumstances linked to the transition of students.

Studying individual differences in reactions to the middle school transition may yield vital information about why early adolescence is a high-risk period for the onset of psychological difficulties in some youth. The present research investigated the pathway leading to one type of adverse development outcome, namely depressive symptoms, with a focus on the role of self-regulatory process. The first goal was to test the proposal that the transition to middle school would interact with personal vulnerability, in the form of maladaptive self-regulatory beliefs, to predict academic and psychological maladjustment. In particular it was hypothesized that maladaptive self-regulatory beliefs in the academic domain would be more strongly associated with perceptions of school related stress and depressive symptoms in adolescence who underwent a school transition than in those who did not. The second goal was to

identify the processes leading from pre-transition maladaptive self-regulatory beliefs to post transition depression. Specifically, it was hypothesized that (1) such beliefs would interfere with adolescent's academic engagement in middle school, (2) academic disengagement would generate higher levels of perceived stress at school, and (3) higher levels of school-related stress would be associated with increase in depression. (2001, p. 929-930)

Transitioning is difficult at any age, but for elementary students leaving the comfort and nurturing atmosphere of that level to go to a new middle school can be daunting for a number of reasons. Most elementary schools have one teacher for all content areas. In middle school, students are expected to abide by harder academic rigor and follow from class to class with differing departmentalized teachers (Midgley &Urda, 1992). "First, some adolescents may experience greater difficulties negotiating challenging encounters such as transitions than other adolescents. Second, despite the evidence for detrimental effects of school transitions, findings regarding patterns of global change have been inconsistent." (Rudolph, et al., 2001)

Data for this study was done in the form of a questionnaire given to students in multiple parts in the end of their fifth grade years and at the beginning of their sixth grade years. The questionnaires contain a variety of qualitative data for students to answer. The research expressed the relationship of negative performance or difficult times in middle school to attribute to the negative behavior and demeanor in students. In identifying the factors that can go wrong in middle school, there is further study that the authors suggest to conduct in regards to how the struggle of transition can have a detrimental effect of grade and behavior for the remainder of the child's academic life (Rudolph et al., 2001).

The final results of research done by Yecke suggested that the teachers who she had completed her research with felt that a K-8 model would be more beneficial as long as students were transferred minimally. They valued and understood how transitioning could adversely affect the students and their population (2010). In addition to Yecke, another author to find significant reasoning to keep transitions to a minimum is Alspaugh (1998).

Alspaugh has written many educational articles. The article, *Achievement loss associated with the transition to middle school*, examines both middle and high school transitions to identify if the loss in achievement is relevant. He made a valid observation when he identified the connection between multiple schools transitioning into the middle school. He wrote,

The achievement losses associated with the transition to middle school at 6th grade were consistent with the achievement losses found by Alspaugh and Harting (1995). The students involved in the pyramid transition of multiple elementary schools into a single middle school experienced a greater achievement loss than did the students in a linear transition of a single elementary school to a middle school. Mixing students from multiple elementary schools may tend to increase the transition achievement loss. (1998, p.24)

Achievement loss in academics, due to the transitioning of students to middle school can be analyzed again through the research done by Jonah Rockoff and Benjamin Lockwood's *Stuck: How and why the middle schools harm students' achievement* (2010). The pair analyze the scores of New York City schools to identify if there is achievement loss by students who attend traditional middle school. They write,

What we found bolsters the case for middle-school reform: in the specific year when students move to middle school (or to junior high), their academic achievement, as measured by standardized tests, falls substantially in both math and English relative to that of their counterparts who continue to attend a K-8 elementary school. What's more their achievement continues to decline throughout middle school. This negative effect persists at least to through the grade, the highest grade for which we could obtain test scores. (Rockoff & Lockwood, 2010, p. 70)

While the significant findings show a direct correlation of New York City students' grade span configuration affects their academic achievement, the authors do not have a reasoning for their finding. Moreover, they suggest a connection to the psychological development of the students as they are young adolescents. Further examining the effects transitioning schools that Rockoff and Lockwood completed, West and Schwerdt also conducted their own research on achievement levels in New York City schools and correlation to grade span configuration.

Professional Development of Teachers and Transition

Professional development has a direct link to student achievement and teacher confidence but it is unclear if a guarantee of student performance can be tied to professional development; if at all. "The promising practices consistent with middle school philosophy and the types of professional development designed to help them become fully implemented are in need of careful study to determine their impact on teaching and learning. Middle level schools highly engaged in professional development and those not highly engaged can serve as starting places to study the extent to which such efforts do, in fact, impact student achievement." (Schmitt, 2004, p. 10)

Forty three schools were used for Schmitt's study. Half of the schools were considered schools with high professional development and half were considered to have low professional development. Qualitative research and data was collected initially through the use of surveys sent to school administrators. Three grade configurations were determined and used for the research of the article. Analysis of Variance Techniques were used to examine the student achievement levels of school with high professional development and low professional development (Schmitt, 2004).

Through the data collection of the schools with low and high professional development, there were not true significant distinctions to show from the data. While the schools with low professional development scored slightly marginally lower than the others, it should be noted that the significance was minimal. Thus, opening and continuing a need for clear data and evidence that students in the middle years should remain in sixth grade as part of the elementary school experience (Schmitt, 2004).

Behavioral Concerns in Middle Schools

Middle school grades tend to see a rise in behavioral concerns. In addition, sixth graders included in middle school are constantly exposed to the behaviors of the students in seventh and eighth grade. The grouping of these grades together socially, emotionally, and biologically can have a negative impact on the sixth grade population as they are vulnerable to the older grades (Cook, 2008). Concluding statements made in research Abella in the article, *The effects of small K-8 centers compared to large 6-8 schools on student performance*, state that students who were attending the K-8 centers were less likely to be absent than those in traditional middle school (2005). Furthermore, "except for the eighth grade year, the K-8 centers showed fewer incidents of out-of-school suspensions." (Abella, 2005, p. 34)

“Despite the immense background of research on the social problems of youth violence, substance abuse, and suicide, as well as the growing discussion of grade configuration, previous research has not adequately addressed the intersection of these topics.” (Gunter, 2010, p.) Due to the research problem and lack of correlation, the author expresses the research question in the article to be, “the study will present an initial investigation into grade configuration to determine whether any significant differences exist between school grade configuration types and these areas of deviance.” (Gunter, 2010, p.900)

The collection of data by Gunter was done through quantitative questionnaires used and created by the Center for Disease control. Data was collected and broken down in “prevalence rate” and the “second phase used HLM to determine whether grade configuration has a significant effect on the dependent variables after correcting for the nesting structure and possible autocorrelation.” (2010, p. 904)

In the first area, stated that the relationship of the social and personal deficits in mood and behavior did not exist prior to students entering the middle school grades. It also states that there is not a significant increase in these areas caused by the middle school aged area. Thus, the major concern and link to other research continues to return to the academic aspect of grade configuration (Gunter, 2010). However, Yecke’s research, (2005) quotes teachers from middle schools who had begun teaching in a K-8 school in Baltimore. The teachers stating that the difference of behavior in the two grade configurations were definitely different. The teachers felt that the behavior of the 6th through 8th grade students was much better contained and under control than that of the local 6-8 middle schools. The teachers who had been at the school did not feel that there was much difference.

Similarly, the report by Yecke (2005) quotes more teachers from a differing K-8 school that explain the importance of keeping students in the same school for a longer period of time is beneficial to the behavior of the students. The last school examined in the study was a K-8 school in Philadelphia. The teachers were again interviewed and quoted stating that the students on their campus knew the expectations and the teachers felt that students who were coming from other schools, into their school in sixth grade had a harder time adjusting behaviorally than their 6-8 students.

In a study by Weiss and Kipnes (2006), they discuss in their research the decline in behavior to be linked directly to self-esteem during the adolescent years. They note that the transition into the traditional middle school, as stated in other articles, is directly linked to the problem of negative self-esteem and subsequently a reason for behavioral problems to develop and continue throughout the middle school years. “Interpersonal relationships are also demonstrably less positive in middle schools than in other schooling forms, and some researchers have argued that the middle school provides a structure to facilitate negative behaviors such as cruelty or meanness among other students.” (Manning and Kipnes, 2006, p.224)

Academic Achievement and Grade Configuration Completed Research Studies: No Correlations

The research in an article by Dove, (2010) asks the question of whether or not there is a correlation to students’ scores based on grade configurations, specifically if students in sixth grade. The test examined was the Arkansas Benchmark Examination (Dove, 2010). “A purposive sample of 281 schools was drawn from this population. To be included in the sample, the schools had to retain their grade span configuration for the 3 years examined and had complete Arkansas Benchmark 6 scores for mathematics and

literacy for the combined population for the 3 years posted to the Arkansas Department of Education School Report Card website.” (Dove 2010) Schools and students were not examined through standardized testing scores. Instead, benchmark scores were used to evaluate student achievement for math and literacy.

In Dove’s study, there was no significant data that demonstrated academic achievement was related to grade configuration through the use of benchmark assessments in Arkansas. The authors concluded that while the research does not show a correlation specifically, it did identify that students were falling behind and showing significant loss in academic achievement during the middle school years. The authors also reflected that this study was done with benchmarks statewide and not in a specific local area. This article identifies a need to examine schools and population groups in a local population or use the standardized testing scores of individuals to clearly indicate why or where deficits are stemming from (2010).

Most of the data collection for, *Reexamining Middle School Effects: A Comparison of Middle Grades Students in Middle Schools and K–8 Schools*, in terms of grade configuration have to do with academics. The research problem is, if there are negative effects in academics due to grade configuration, are there negative effects in non-academic areas as well? The researchers for this article clearly examine three research questions, which are as followed: “Do outcomes in eighth grade vary based on the type of school form a student attends? If we find differences in outcomes between school types, are these differences due to composition differences in their students? Do the effects of self-esteem on school-based outcomes vary by schooling form?” (Weiss & Kipnes, 2006, p.247)

Data collected for this study was taken from the Philadelphia Education Longitudinal Test. The Test examines seven aspects of a student beginning in eighth grade and continuing through high school. Data was taken from the Philadelphia school district at random. Data collected was a blend of qualitative and quantitative based on grades and the longitudinal test. Students were then evaluated and examined side by side in comparing students in middle school to students who attended a K-8 school (Weiss & Kipnes, 2006).

In the results, there are no significant findings that are exponential to show a difference in type of school configuration for eighth grade students. The significance is that they are examining students in eighth grade and deciding there is no difference at that point rather than examining the sixth grade and the pivotal time period that year is on a middle school student. A link to other research is the identification of the size of a school may have some indication of why scores fall below the benchmark. Also, there is a link to research in that self-esteem, motivation, and other social factors are increasingly difficult to balance the middle school ages. Thus, other items may cause stress which may cause a deficit in grades (Weiss & Kipnes, 2006).

In, *Which Middle School Model Works Best? Evidence from the Early Childhood*, the research problem for the article is to further expand on the restrictions and benefits of specific middle school model structures. Three research questions are identified for this article. "What is the influence middle schools' grade spans have on eighth-grade adolescent students' academic achievement? After controlling for relevant student- and school-level characteristics, does classroom quality account for (if any) variation in students' achievement among the different grade span configurations? Do gender and

family structure moderate the influence middle schools' grade spans have on students' achievement?" (Carolan, 2015, p.596)

“To reduce the complexity of the research questions and to exploit the study's panel design, data from the spring fifth grade and spring eighth grade waves are used. The final analytic sample was derived from those students who met four criteria: (a) a nonzero longitudinal weight; (b) a valid score on the spring eighth-grade math assessment; (c) attended a comprehensive public school in the spring eighth grade, which excludes students in magnet and charter schools; and (d) whose eighth-grade math teacher completed the teacher questionnaire. This subsampling strategy resulted in a final analytic sample that included 2,729 children nested within 977 schools.” (Carolan, 2015, p.579)

In this particular research article, the results link to poor performance to the elementary or K-8 schools rather than the middle schools. However, it was noted that the poverty level of the students in that school were significantly higher than that of the other schools. The importance of this to link to further research is to identify that if the socioeconomic class of differing schools is not the same, more than likely the school with the lowered socioeconomic class will have the lower testing scores; regardless of the grade configuration (Carolan, 2015).

Academic Achievement and Grade Configuration Completed Research Studies: Significant Findings of Correlation

Even though the studies previously mentioned do not correlate a direct connection to grade span configuration and achievement level of students, there are a number of research articles that do present data of a connection between the academic success that

comes from K-8 and K-6 model school (Abella, 2005; Schafer, 2010; Rockoff, 2010; Rudolf et al., 2001; West, 2012; Yecke, 2006). Abella (2005) researched the specific effects that smaller schools had on student achievement versus bigger schools. The focus was between the smaller school being K-8 and the larger school having a grade span configuration of 6-8. Abella conducting his study in Miami-Dade, Florida.

The article has three research questions dealing with academic achievement, attendance, and behavior. The study focused on mathematics and reading comprehension scores. The results found were, “The math and reading comprehension results were similar in that the K-8 students outperformed comparison students most clearly in sixth grade, with differences between the groups steadily declining in the grades to follow.” (Abella, 2005, p.32) Concluding statements written in the article confirm that the performance in math by students in K-8 centers were vastly better than scores of students in traditional 6-8 middle schools.

Similarly, Rockoff and Lockwood’s research describe the decline in academic achievement in middle schools to be eminent regardless of the grade that a student enters the traditional middle school (2010).

Moreover, these are not temporary dips followed by rebounds in learning. Throughout the middle-school years, students fall further behind. After two years in a middle school, on average a student who entered in the 7th grade will score 0.10 standard deviations in math and 0.09 standard deviations in English below what we would expect if he had gone to a K-8 school. After three years in a middle school, a student who entered in the 6th grade will underperform on 8th-grade assessments by 0.17 standard

deviations in math and by 0.14 standard deviations in English. (Rockoff & Lockwood, 2010, p. 72)

The article by Yecke (2006), *Mayhem in the Middle*, the introduction identifies the governmental need to solve the problem of students dropping out of high school. “Although well intended, the governors’ solutions misidentify the cause of high school problems. Abundant evidence indicates that the seeds that produce high school failure are sown in grades 5-8. In far too many cases, American middle schools are where students’ academic achievement goes to die.” (Yecke, 2005, p.1) The report continues to expand and justify the statement by examining three schools in differing cities; Baltimore, Milwaukee, and Maryland (Yecke, 2005).

The in-depth studies on each of the schools validates the final conclusions by Yecke, and suggestions made at the end of the report. Examining these schools and their scenarios can give educators and gate keepers a glimpse of the success a school can have by simply altering grade span configuration. Analyzing separate cities and identifying similar outcomes in each, allows the researcher to further prove her point that the results are meaningful no matter what location the school is in. The three schools she writes about are very different in location and socioeconomic factors. Each school faced different struggles and challenges from enrollment to neighborhood crime. (Yecke, 2005)

In Baltimore, an in depth study of Hamilton Elementary-Middle School was conducted by Yecke. The school moved the K-8 model after the number of students enrolled took a drastic turn. Since then, enrollment has been steadily increasing. The school itself is located in a residential neighborhood. Academically speaking, the students enrolled in this school, “consistently score above the district in both reading and math, but achievement begins to lag in fourth grade. Teachers attribute this decline, in part, to

the influx of transfer students into the upper grades.” (Yecke, 2005, p.26) Regardless of the lag, the students still outperform the other district schools.

Similar to Hamilton Elementary-Middle School, Humboldt Park K-8 School in Milwaukee also saw a drop in enrollment and almost closed its doors. While the school was built and initially run to encompass K-8, the shift in grade configuration transformed in to an elementary only school (K-5). Upon the lack of enrollment, the school grade span configuration was reverted back to the K-8 structure it had originally been. A big difference between the two schools is population of Humboldt Park is very diverse and of lower socioeconomic status. Nevertheless, the academic achievement of the school rivals schools with populations that are better off than its students. The students of Humboldt Park outscore other schools in every content area than other district elementary and middle schools (Yecke, 2005). “In math, reading, and language arts, achievement of fourth grade students at Humboldt Park and Milwaukee district are similar. By eighth grade, however, the achievement of students at Humboldt far surpassed that of students in the rest of the district in all five subjects tested.” (Yecke, 2005, p.31)

The third and final school examined in, *Mayhem in the Middle*, is the Julia de Burgos School in Philadelphia, Pennsylvania. This school differed from the others in the study in a few ways. First, the school was initially an elementary school rather than a K-8 or elementary setting. The building was not well maintained and instead of a residential neighborhood, the setting of the school was an urban neighborhood; an inner city school. In addition to the low socioeconomic climate the population was 40 percent of students were English as a Second Language (ESL) and 20 percent of students were students with exceptionalities (ESE). For this particular school, the academic achievement scores for Julia de Burgos School did not reflect as high of achievement as the other two schools

noted. “However, all grades showed gains over the last three years, notably in math, with an additional 16 to 30 percent of students scoring at or above the national average.”

(Yecke, 2005, p. 40)

In addition to the work done by Yecke, an applied dissertation study written and researched by Karen Schaffer (2010), found significant correlation in academic achievement and grade span configuration. Schaffer used 2009 Florida Comprehensive Assessment Test (FCAT) scores to analyze three grade span configuration models. “The problem posed in this study was whether Florida’s sixth grade students in public schools, including Florida’s public charter schools, demonstrate significantly different academic achievement in mathematics and reading dependent on the grade span configuration of the school.” (Schaffer, 2010, p. 75)

The first hypothesis in the study was that there is no difference in grade span and academic achievement for sixth grade students. This was rejected in that after collecting and analyzing the data from the FCAT scores, she found a positive correlation between the K-6 model and academic achievement on the FCAT. For her study she examined the mean for both math and reading and found little difference between the K-8 and 6-8 model of school when examining the FCAT scores of these schools. (Schaffer, 2010)

The differing research results of Yecke and Schaffer are not that the 6-8 model is not effective because in both studies, neither found the 6-8 grade model to be the better academically. The grade spans to determine the better, in regards to academic achievement based on these two studies are K-6 versus K-8. In addition, all of the studies, the three by Yecke (2005) and the Florida study by Schaffer (2010), public school data was collected and used to report the findings. In all of these studies the question of

socioeconomic status was a significant item to address. By narrowing the socioeconomic status to private schools, the gap of most research can be decreased.

Private School and Grade Span Configuration

The governmental hold on grade span configuration is not fixed, most schools tend to operate their structural framework in a K-5 elementary, 6-8 middle school, and 9-12 model. Private schools are at a disadvantage when it pertains to the research. Due to sample size and smaller audience, private schools can be easily left out of research studies. While studies show that public schools do have some variations of the grade span configurations (Yecke, 2005).

“Neither the middle school nor junior high has ever been popular among private schools, which educated only 2 percent of their 6th and 7th graders in these types of schools in 2007.” (Rockoff, 2010, p. 69) Thus, making the private school grouping an ideal place to test this research topic in terms of identifying schools that fit into varying grade span configurations.

Research Question

A single question guided this study: Does including sixth grade into the elementary department level help improve standardized testing scores of students in private school settings, in Florida? Analysis will be conducted through the collection of schools of three differing models K-6, K-8, and the 6th-8th models. Scores on the TerraNova, Third Edition will be collected and evaluated based on the mean score of sixth grade students.

Chapter 3: Methodology

The purpose of this study was to examine the 6-8, K-6, and K-8 models of elementary and middle school grade span configuration to identify which design is more effective for the academic success of sixth grade students, based on the mean scores of the Total Score national percentile on standardized test scores in private schools in Florida. A random sample of individual student scores were collected.

Participants

The population of participants used in the research study are a target sample from schools with three differing configurations of grades. The target sample of students are sixth grade population from schools selected that administered the TerraNova, Third Edition in the spring of 2015. Schools participating in the study are all accredited by the Association of Christian Schools International. The total population will be made valid through the completion of a power analysis of student population.

Instruments

The TerraNova, Third Edition is the instrument used to collect the data of the participants in this study. The TerraNova is an achievement test. A test is a measurement of knowledge that has obtained in a specific amount of time. A test can also be defined as a "type of test is an objective and standardized method for estimating behavior based on obtaining a sample of that behavior" (*Testing in American schools, p.176, 1992*). An achievement test is a test that has been acknowledged as having validity in the academic society and measures student achievement in specific academic areas. (*Testing in American schools, 1992*)

Procedures

Design. The design of the study is a quantitative correlation design that examined the National Percentile Total Scores of individual students from three differing types of grade-span configurations; K-6, K-8, and 6-8 (MS) where schools use the TerraNova, Third Edition. The researcher obtained the 2016 Total Score National Percentile of each sixth grade student in attendance at the sample schools. The design contains one dependent variable which is the mean score. The independent variable in the study is the grade span configuration. Data collected from each school was compiled into an Excel spreadsheet. From the Excel spreadsheet, the data were transferred into SPSS for further analysis.

Data collection involved locating schools that administer the TerraNova in the spring. To identify schools, the researcher collected a list of schools from the accrediting agency that endorses the TerraNova, by contacting the Florida Regional office in Florida and through online resources. Upon identifying schools whose leaders facilitate the TerraNova on campus, the researcher called and emailed each school requesting permission of the highest level administrator. The request was once the researcher's Institutional Review Board permission was granted would the school leader allow the student data to be released confidentially to be used in the study? Scores cannot be released without consent of a gate keeper at the school. After the Institutional Review Board granted permission, the researcher followed up with emails and phone calls to the contact employee to request the individual student National Percentile of the Total Score on the TerraNova, *Third Edition*. Due to the nature of the study, there is no need to differentiate between students within a particular school. Rather, the data being evaluated are the scores of students based on the grade configuration of the school.

Data Analysis

The record of student results for end of the year testing is disclosed to school administration, teachers, and parents at the end of the school year. The test scores for this exam are not made public and therefore had to be retrieved from each individual school via permission of a gatekeeper. Each school administrator was contacted by phone and the researcher followed up with an email requesting permission from the school leader to participate in the study. After, IRB approval the researcher followed up with another phone call and email request for data. Once the data were obtained, a correlational study of academic achievement based on the National Percentile of Total Scores of the three grade span configurations of schools was conducted. Using Excel for data entry followed by input into SPSS computing an application of an analysis of variance (ANOVA) and a test of homogeneity of variances were completed. By doing so, the researcher examined differences between means among the three sample groups.

Limitations

The first limitation of the study is the researcher examining only private schools. All school administrators must be notified and scores need to be requested from each school. If school administration does not wish to participate in the study or if data is not returned in a timely manner, the analysis of data could be jeopardized in terms of validity of sample size. For the study itself, it is important, but obtaining the scores may be more difficult due to the second limitation. The second limitation is that the scores are not public information. Schools may be hesitant to participate in the study for fear of negative results for their specific grade configuration.

Even though only private, Florida schools participated in the study, demographics and economic differences in the locations of the schools are possible limitations to the

study. Selecting only private schools accredited by the same company ensure that the organizations each student in the sample have been selected from are receiving very similar educations. However, all private school leaders can choose their own curriculum, therefore identifying another limitation.

Chapter 4: Results

The purpose of this study was to examine the 6-8, K-6, and K-8 models of elementary and middle school grade span configuration to identify if there were significant differences in academic performance on standardized, end of the year testing. A random sample of students' National Percentile Total Scores were collected from schools ranging three differing grade-span configurations. All schools in the study were private, parochial schools with similar demographics and all schools follow the same accreditation protocol and standards. No students were excluded from the study as noted in Table 1.

Table 1

Case Processing Summary: The Number and Percentage of Florida, Private Schools Student Data Used in the Study from 2016 Terra Nova Tests.

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Sixth Grade	152	100.0%	0	0.0%	152	100.0%

The study uses two or more groupings therefore an analysis of variance (ANOVA) was completed to identify the degree of difference between end of the year standardized test scores and the three groups of grade-span configurations. There are three levels of independent variables which are K-6 (K6), K-8 (K8), and Middle School 6-8 (MS). The sample size for the study consisted of 152 sixth grade students as seen in Table 1. The population includes only students in the sixth grade of different private, parochial schools in Florida.

Table 2

Test of Homogeneity of Variances

Sixth Grade			
Levene Statistic	df1	df2	Sig.
5.804	2	149	.004

Table 3

Means and Standard Deviations: Total Score National Percentile by Grade-Span Configuration

Sixth Grade			
School Source	Mean	N	Std. Deviation
K6	73.8310	71	22.71562
K8	73.5806	31	22.85866
MS	50.1600	50	31.36250
Total	65.9934	152	28.03416

Table 4

Means and Standard Deviations 2: Total Score National Percentile by Grade-Span Configuration

	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max	Between-Component Variance
				Lower Bound	Upper Bound			
K6	71	73.8310	22.71562	2.69585	68.4543	79.2077	10.00	99.00
K8	31	73.5806	22.85866	4.10554	65.1960	81.9653	19.00	99.00
MS	50	50.1600	31.36250	4.43533	41.2469	59.0731	1.00	98.00
Total	152	65.9934	28.03416	2.27387	61.5007	70.4861	1.00	99.00
Model								
Fixed Effects			25.90538	2.10120	61.8414	70.1454		
Random Effects				8.41617	29.7816	102.2053		180.48647

Table 3 demonstrates no significant difference was evident between the mean score and standard deviation of K6 and K8 schools. However, there was a significant difference between both K6 and K8 schools and middle school (MS) grade-span configurations. K6 resulted in M of 73.8 and a SD of 22.7. K8 resulted in M of 73.85 and a SD of 22.9. MS resulted in M of 50.2 and a SD of 31.36. Appendix B, a boxplot representing the data demonstrates a visual of how K6 and K8 schools differ from MS grade-span configurations. The vertical line for K6 and K8 are very similar whereas the MS vertical line representing mean score is visibly lower than that of the other two.

Table 4 shows the Descriptive Statistic data presented. The mean results for K6 and K8 are nearly identical. The mean for K6 student scores is 73.83 and the mean for K8 is 73.58. The mean for MS student data was much lower than the other grade-span configurations. Much like the mean, MS standard of deviation differed from the K6 and K8. Appendix F gives a visual in the form of a line graph. A nearly vertical line connects the K6 and K8 grade-span means and drops significantly down to reach the mean of MS. This can also be seen in the standard deviation graphs in Appendix C, Appendix D, and Appendix E.

Table 5

ANOVA Results for Grade-Span Configuration

			Sum of		Mean		
			Squares	df	Square	F	Sig.
SixthGrade	Between	(Combined)	18680.753	2	9340.377	13.918	.000
SchoolSource	Groups	Linearity	15389.473	1	15389.473	22.932	.000
		Deviation from Linearity	3291.280	1	3291.280	4.904	.028
	Within	Groups	99992.240	149	671.089		
	Total		118672.993	151			

Table 6

ANOVA Results for Grade-Span Configuration 2

SixthGrade						
		Sum of		Mean Square	F	Sig.
		Squares	df			
Between	Groups	18680.753	2	9340.377	13.918	.000
Within	Groups	99992.240	149	671.089		
Total		118672.993	151			

In Table 5 and Table 6 above, a one-way analysis of variance (ANOVA) was calculated to identify if there was an effect of grade-span configuration on student scores from end of the year testing. The analysis resulted, $F(2,149) = 13.9$, $p = .000$. The results can be considered significant because p is below 0.05. Based on the ANOVA the results between MS and those of K6 and K8 are significantly different.

Table 7

Measures of Association

	R	R Squared	Eta	Eta Squared
SixthGrade * SchoolSource	-.360	.130	.397	.157

Table 7 identifies the measure the statistical strength of the association between grade-span configuration and Total Score National Percentile mean scores. The r value in the study is -3.60.

Chapter 5: Discussion

This research study was conducted to determine if a clear correlation between grade-span configurations of sixth grade and if it effects the academic achievement on the TerraNova, *Third Edition* for students in Florida, private schools. The study is effective for parents, teachers, and school administrators in choosing the best program for students. Based on the data, a parent can make a conscious decision as to what school is best for his sixth grade student. Teachers and administrators can discuss possible reconfigurations of grade levels, if necessary for the schools. Finally, schools can market their achievement and use of the research to demonstrate to parents the effectiveness of the schools' grade span configurations and the assumed outcome of academic achievement of testing.

Results

Based on the results of the data collected for this study, K6 and K8 schools have a significant higher difference in academic success on the TerraNova standardized test taken in 2016. The mean scores for sixth grade students in the middle school grade-span configuration were significantly lower than students who were in the previously mentioned grade-span configurations. These findings link to the many research articles noted in this study in that the middle school grade-span configuration, despite being the most common in the United States, is shown to have the lowest performing students on standardized testing when comparing K6, K8, and middle school grade-span configuration (Dove, 2010, Cook et al, 2008, Rockoff & Lockwood, 2010).

Using the results from the study, the researcher can further the study in a number of ways. Reporting the findings of the study to various schools that are of similar demographics to the schools who participated in the study will give insight to school

leaders and parents on grade-span configuration and student academic achievement on standardized tests. The study can be duplicated using different school demographics and with various other standardized tests. For privately owned and operated schools the change of grade-span configuration is not as difficult as it might be for a public school.

Limitations

Demographics and location of the schools were limited by selecting all private, parochial, and accredited schools in Florida. By selecting schools with similar demographics, the researcher narrowed the limitations of difference in data due to demographics. However, even by selecting such schools, there are always fluctuations in location and diversity of schools; especially in Florida. Limitations to the study would be evident should demographics prove to be drastically different in any way. Such demographics include school size, budget, cost of tuition, and the percentage of ESOL or ESE students.

Analysis of teachers' credentials were not taken into account in the study. Private school teachers are not all required to have Florida State Certification, however some do. Data collection only accounted for student data and not teacher data. A teacher who is considered a master in her field should demonstrate higher achieving scores than those who are not. Experience, drive, and passion in an educator can make a big difference in the student scores.

Though elementary and middle school grade-span configurations differ, technique in how content areas are delivered do not always differ. For example, a sixth grade in an elementary grade-span configuration might utilize content area teachers and have students rotate classrooms. In data collection, school leaders were not asked to identify

what type of structure they use within their school regardless of the grade-span configuration.

The amount of time a teacher has been at a school and how long the school has administered the TerraNova could have a direct link to the resulting scores of the students. As teachers administer the test, they become more familiar and comfortable in the instructions and test taking procedures. How long the school has used the TerraNova as their end of the year assessment tool could have implications of the students' end of the year scores.

Curriculum and textbooks for private schools are determined by the head of school, principal, curriculum specialist, or teachers; depending on the school. Identifying the curriculum used could be insightful in what students are learning and if the curriculum aligns with what is on the end of the year assessment. Furthermore, private schools are not required to follow the State Standards. Private schools are able to create or use different standards depending upon the school leadership team. Exploring differences in the school standards and expectations for student in sixth grade could positively or negatively link to performance of end of the year assessments. Curriculum and standards go together because teachers utilize the curriculum to accomplish standards. Variations of these two areas can differ greatly from school to school. Neither of these areas were included in the study.

Recommendations for Future Research

This research study was limited to a very distinct population and type of school. Using private, parochial schools and finding similarities in the data to studies conducted using public schools implies that further research be conducted on the topic and that grade-span configuration become more commonly researched and developed. Future

research should include analyzing the differences in the teaching within the classroom between grade-span configurations to identify qualitative data that could benefit those who are in middle school settings to advance student scores by adopting different teaching methodologies. Also identifying the way that instruction is taking place within the various content areas could be researched in order to see if teachers focused in one content are more beneficial than teachers who teach all content areas.

Further research could be conducted to determine possible gender, race, and socioeconomic status of students plays a role in the distribution of test scores. Parental involvement in students' academics should also be analyzed to determine if parents who place their children in private schools are more active in participating in academic achievements.

Beneficial research that could come from this study would be to track students from the sixth grade year, identifying specific grade-span configuration, and report data from the SAT and ACT to determine if there are long term effects on student achievement regardless of private or public schooling. The longevity of a study to an extent as one mentioned would identify if there truly is an urgency to change grade-span configuration or if students in varying grade-span configurations eventually even out in performance on standardized testing.

Also, because private and public school students do not take the same high stakes tests, an interesting study to be conducted would be to have students in both private and public schools take the exact same test in sixth grade. Analysis of the results would merge research studies already conducted to identify in a true grade-span configuration movement should take place in all schools; not just one type of school or the other.

Future research on grade-span configuration should not be limited to only academics. It could be assumed that there could be an even more direct link to grade-span configuration and behavioral incidents within the school setting. While the academics are evident in this study to conclude academics are influenced, there may be even more influence on students than the researcher was able to find in the study.

Conclusion

Research in the area of grade-span configuration is adequate when researched, but the idea of differing grade-span configurations is not a popular topic and there is not nearly enough information given to the general population. The idea that merely reconfiguring the organizational structure of grade span might have a direct influence on the academic achievement of students should be on the minds of all educators. Through the research collected and analyzed in the literature review, the data requested and collected from various private schools, and the results from the data collection indicate similar findings. Lack of studies in the area using private schools was determined. The study used private, parochial schools that used the same end of the year test, the TerraNova, *Third Edition*. Using only sixth grade scores, the National Percentile of the Total Score for each student was collected. Using the mean of the national percentiles as the dependent variable and the school grade-span configuration as the independent variables.

Grade-span configurations used in the study consisted of K-6, K-8, and middle school (MS) 6-8. The findings indicated that for K6 and K8 schools there was no significant difference in the mean score. There was less than a one percent difference between the national percentile mean scores of these grade-span configurations. 6-8 (MS) grade-span configuration students performed significantly lower than the other two

grade-span configurations. Students in schools comprised on K-6 or K-8 grade span configurations confirmed to have higher performance on the TerraNova testing in the 2016.

The findings of the research completed confirm most studies that suggest there is some correlation between grade-span configuration and academic achievement on achievement testing. Studies that suggest there is no correlation may have concluded may have differed due to the demographics or the use of different achievement tests. The limitations and future research advocate for school leaders and constituents to further study the correlation between grade-span configuration and student achievement.

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Appendix A

IRB Approval

Appendix A

IRB Approval

MEMORANDUM

To: **Deborah J Rantin**
Abraham S. Fischler College of Education

From: **William Smith, JD,**
Director, Institutional Review Board

Date: **May 27, 2016**

Re: **IRB #: 2016-199; Title, “A Quantitative Study on the Correlation between Grade Span Configuration of Sixth Grade Students in Private Florida Schools and Academic Achievement on Standardized Achievement Scores.”**

Based on the information provided, your protocol does not require IRB review or approval because its procedures do not fall within the IRB’s jurisdiction based on 45 CFR 46.102. Therefore, your protocol has been classified as “Research outside the purview of the IRB” for IRB purposes; your study may still be classified as “research” for academic purposes or for other regulations, such as regulations pertaining to educational records (FERPA) and/or protected health information (HIPAA).

This protocol does not involve “human subjects research” for one of the following reasons:

- (a) The study does not meet the definition of “*research*”, as per federal regulations: “*research*” means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.
- (b) The study does not involve “*human subjects*,” per federal regulations. “*Human subject*” means a living individual about whom an investigator conducting research obtains:
 - (1) Data through intervention or interaction with the individual, or
 - (2) Identifiable private information.
- (c) Other:

Please retain a copy of this memorandum for your records as it indicates that this submission was reviewed by Nova Southeastern University’s Institutional Review Board.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed by Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991. Cc:

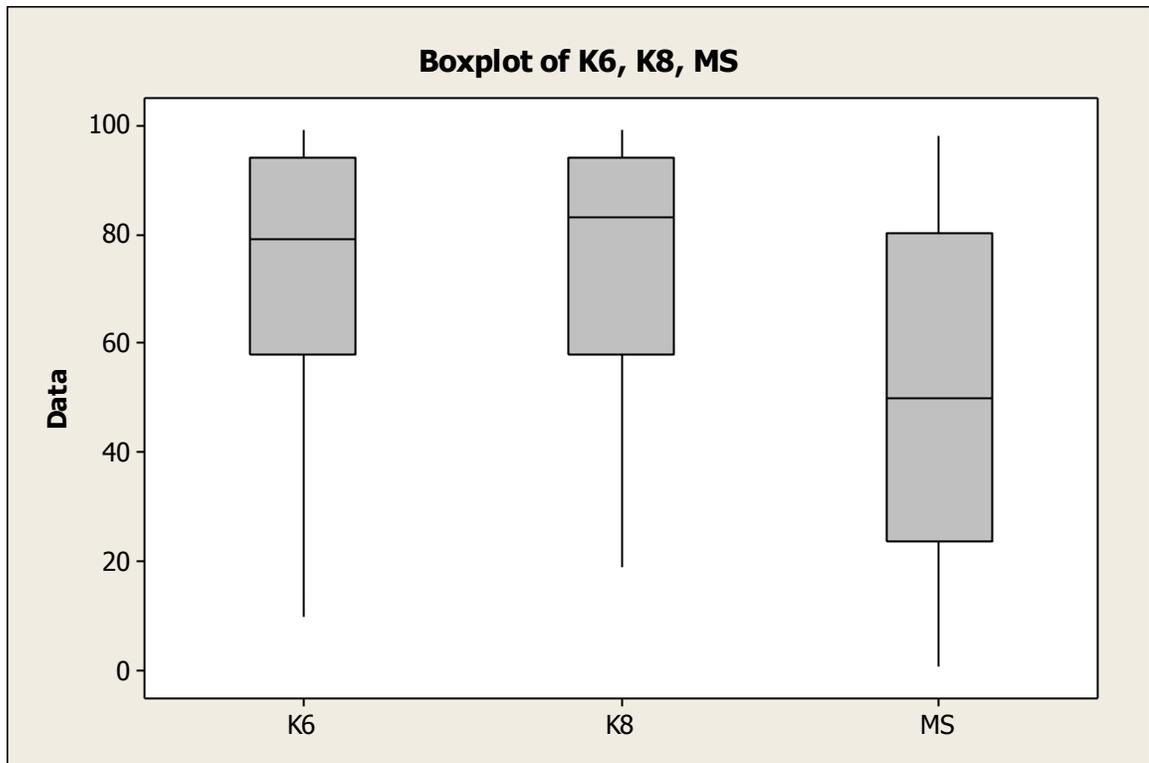
Cc: **Ashley Russom, Ed.D**

Appendix B

Boxplot of K6, K8, and MS

Appendix B

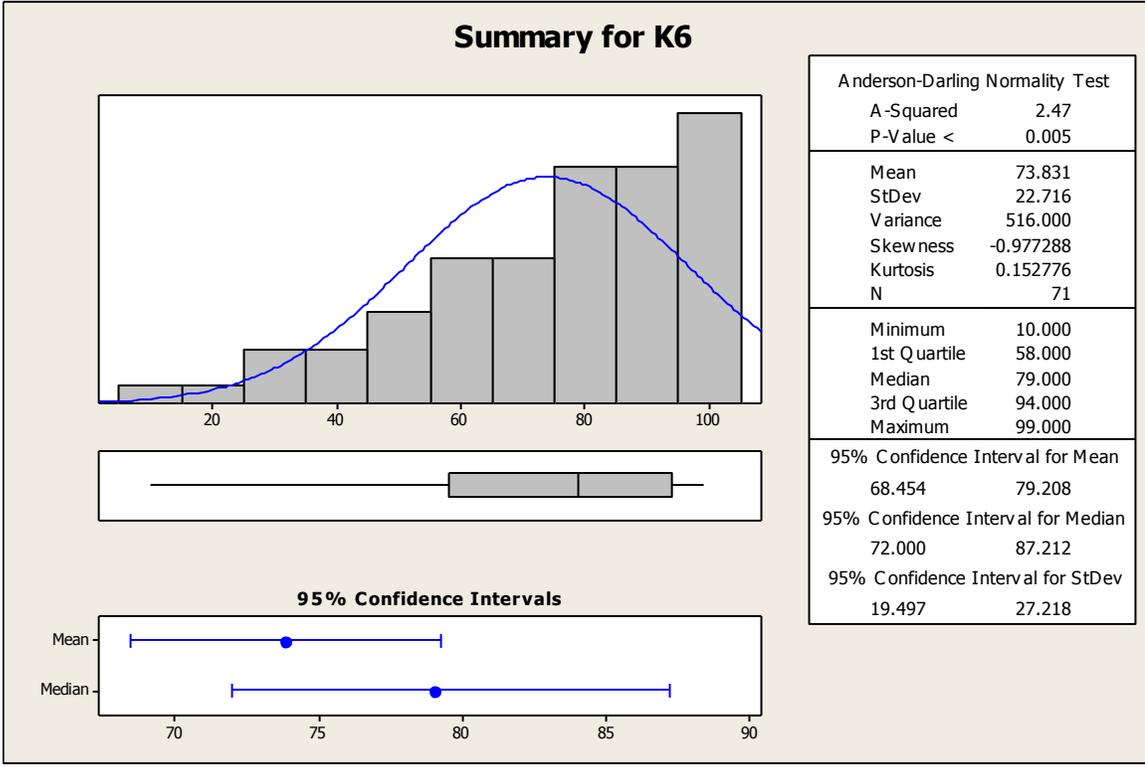
Boxplot of K6, K8, and MS



Appendix C
Summary for K6

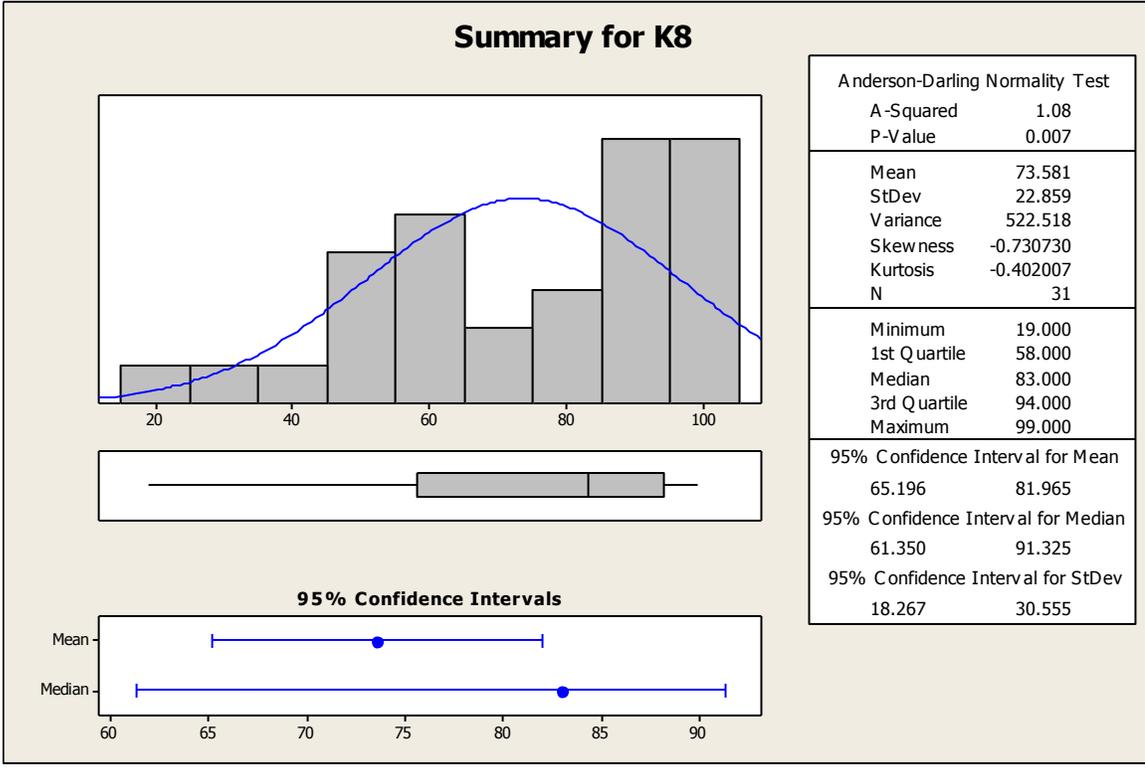
Appendix C

Summary for K6



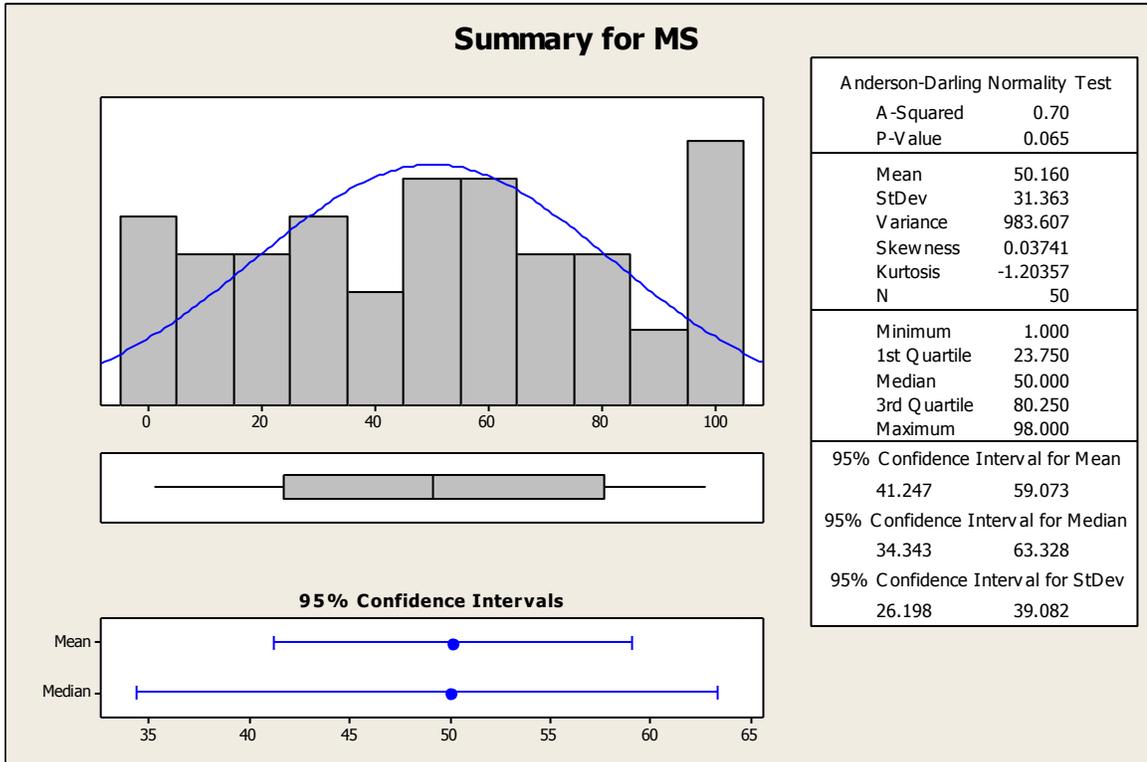
Appendix D
Summary for K8

Appendix D



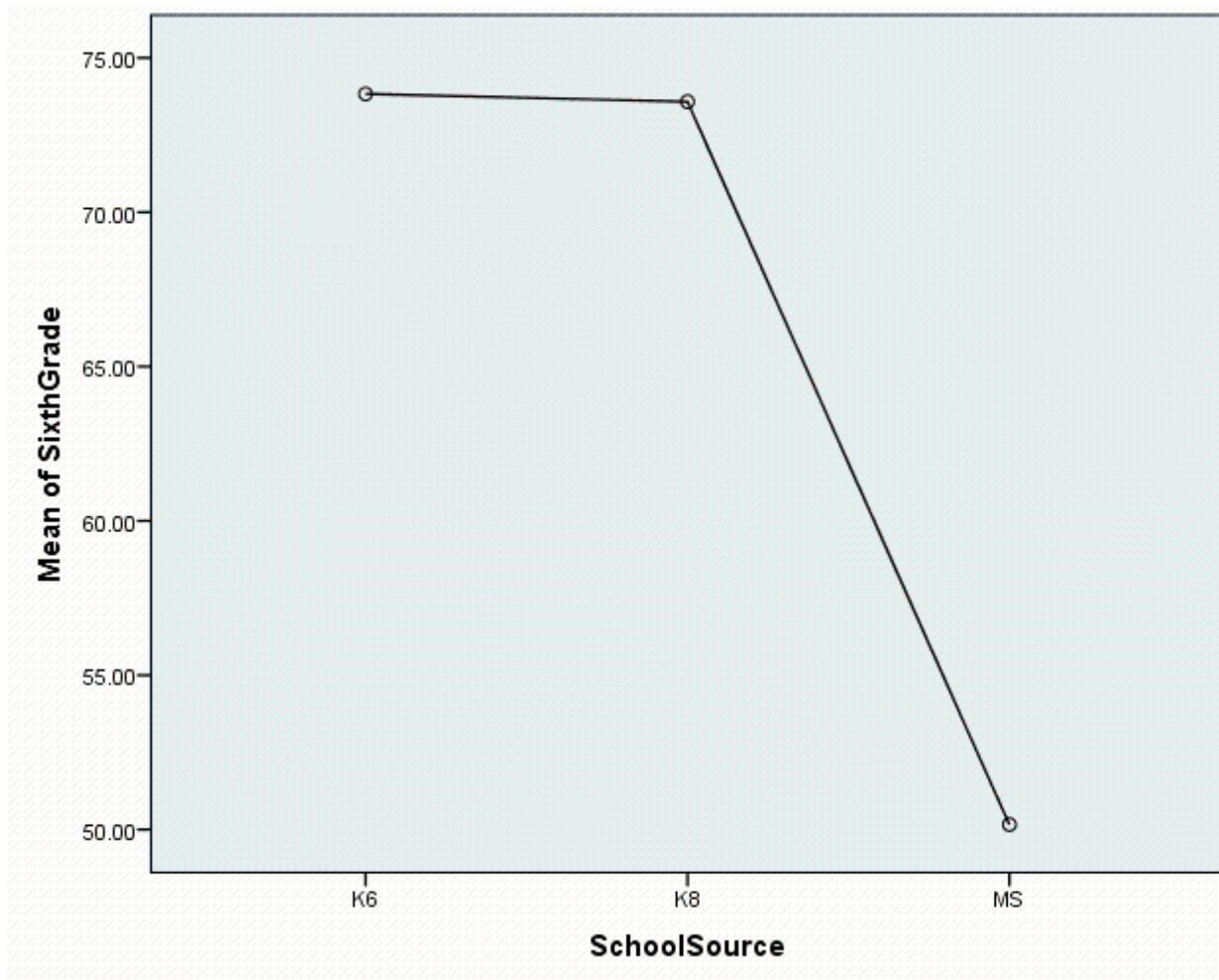
Appendix E
Summary for MS

Appendix E



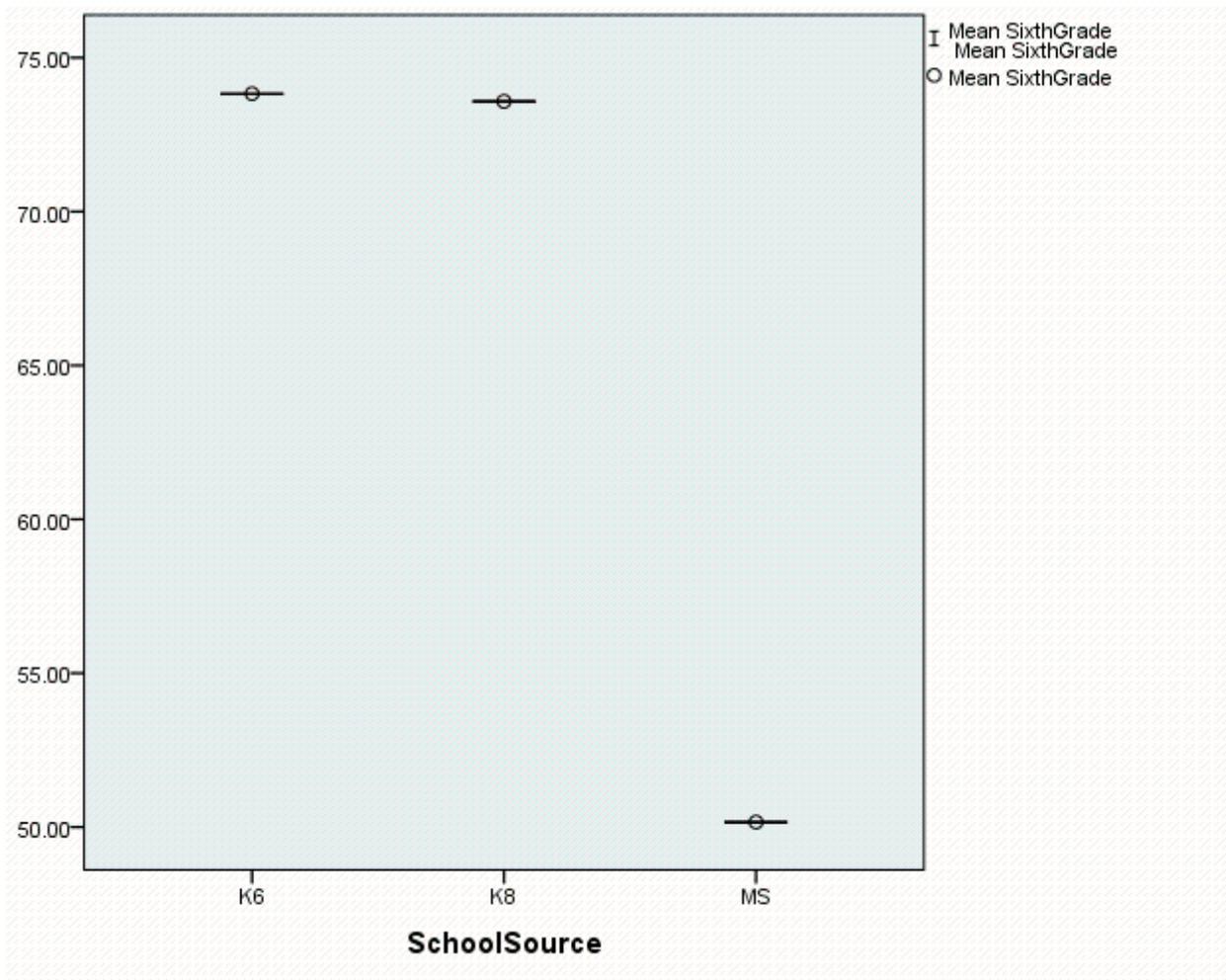
Appendix F
Line Graph of Data

Appendix F
Line Graph of Data



Appendix G
Scatter Plot of Data

Appendix G Scatter Plot of Data



Appendix H

Histogram of Standard Deviation

Appendix H

Histogram of Standard Deviation

