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Anne M. MacFarland
University of Nebraska at Omaha

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A COMPARATIVE ANALYSIS OF 6TH GRADE ACADEMIC
AND NONACADEMIC OUTCOMES IN TWO
DIFFERENT SCHOOL CONFIGURATIONS

by

Anne M. MacFarland, Ed.D

A Dissertation

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Under the Supervision of Dr. Tamara J. Williams

Omaha, Nebraska

April 2017

Supervisory Committee

Dr. Kay Keiser, Ed.D.

Dr. Jeanne Surface, Ed.D.

Dr. Germaine Huber, Ph.D.

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ABSTRACT

A COMPARATIVE ANALYSIS OF 6TH GRADE ACADEMIC AND NONACADEMIC OUTCOMES IN TWO DIFFERENT SCHOOL CONFIGURATIONS

Anne M. MacFarland, Ed.D

University of Nebraska, 2017

Advisor: Tamara J. Williams, Ed.D.

The purpose of this two-group descriptive efficacy study was to explore the relationship between school configuration and academic and non-academic outcomes of sixth grade elementary students compared to academic and non-academic outcomes of sixth grade middle school students. The independent variable is the school configuration. Group 1 includes sixth grade students who attended school in an elementary school configuration ($n=619$). Group 2 includes sixth grade students who attend school in a middle school configuration ($n=811$).

There were six dependent variables for this study that fell into two specific themes: academic (reading and mathematics achievement) and non-academic (number of days absent from school, number of days suspended out-of-school, Student Engagement, and Student Climate Survey data responses). Academic achievement was defined by scaled scores on the Nebraska State Assessments (NeSA) for Reading and Mathematics. Absence frequency was a ratio level variable that referred to the number of days a student was absent from school. Suspension data was also reported as a ratio level variable that indicates the number of out-of-school suspension days a student received during the

2015-2016 school year. Both Engagement and Climate data included Likert response scores to the research school district's Student Engagement and Climate Survey.

Inferential analysis of student data revealed significant differences for Reading and Math academic outcomes, with higher scores for students attending sixth grade in a middle school configuration. There was no significant difference in the non-academic outcomes of attendance, suspension and engagement. There was a significant difference on the non-academic outcome of climate, with sixth grade students in an elementary configuration reporting a more favorable school environment.

This study may offer insights into other variables associated with student outcomes. Recommendations for further study to address differentiating grade configuration by other factors is suggested.

Acknowledgements

Synchronicity; meaningful coincidence. When I entered the Educational Leadership Office two years ago, it was with the intent of withdrawing from the doctoral program. I felt that a message of that magnitude merited a face-to-face conversation, especially after the time, effort and support that the professors in the department had invested in me. To her wisdom, department chair, Dr. Kay Keiser invited a recently hired professor to sit in on our conversation. Roughly an hour later, I walked out, having just signed up for one credit hour of dissertation work. There was something in that meeting, and it was worth one credit hour to find out. Thank you Dr. Keiser, for introducing me to Dr. Tami Williams.

To my advisor, Dr. Tami Williams, I offer my sincerest appreciation. Thank you for the journey. You offered me an opportunity to learn together, and I never once felt alone. Your energy, commitment and passion are as much a part of this work as my sweat and tears. You knew when to push, when to pull and when to carry. You set a high bar and gave me the boost when I needed it. I could not have done this without you.

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Your knowledge and experience are only outweighed by kindness and professionalism. You are a graduate student's best resource; thank you.

To my colleagues in the Omaha Public Schools, thank you. I feel privileged to work with people who believe that we make a difference in the lives of families and demonstrate that belief every day. I could not do this without your support, opportunities and friendship. You continue to help me improve as an educational leader. Thank you for your honesty and trust. I want to especially acknowledge the Research Department staff for their patience and guidance.

A special thank you to "MacFam." I look forward to sharing this accomplishment with you in person – don't worry, I won't make you read it, but we will celebrate. First one today! To my mom and dad, thank you for always encouraging me – I did it! Your voices were in my heart and mind each day, I miss you, but know you are proud.

Most importantly, I want to acknowledge my family. My children will always be my greatest accomplishment. Thank you Catie and J for believing I could do it. It's now your turn. You have both grown up so much along this journey. I am sorry for the times I was late, missed your activities, and lugged all that "disorientation" stuff on all our trips – not this year!

Finally, to Bryce, thank you for reading, re-reading, and not writing when I asked you to. Your stories and experiences danced in my head – like passing periods – before they made their way onto the pages. You are patient, kind, loving and forgiving. I am a better person when I am with you. Look, I finished the little term paper! What's next?

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Chapter 1 Statement of the Problem

Introduction

Leslie, a sixth grade girl, is visiting with her school counselor. The school counselor asks Leslie how she can help. "It's my friend Raja" Leslie says. "We have been best friends since kindergarten. We have always done everything together. We even have the same birthday. Lately, it seems like Raja doesn't want to do anything with me anymore. Instead of getting together to talk about our favorite books, she just wants to go to the mall and talk with boys. It's like I don't even know who she is." This scenario is not new for the counselor, its one she has encountered many times, working in a school with pre-teens. Being 11 years old can be challenging.

What the counselor knows is that Leslie is likely experiencing the complexity of being 11-years-old; that uniquely variable stage in human development when individuals transition between childhood and adolescence. Equally as complex is the school environment educators construct to best support both the academic and developmental needs of these students. Bedard and Do (2005), report that in 2001 there were as many as twelve different school configurations in the United States serving middle grade students; the most common organizations for schools including sixth grade were kindergarten through sixth or eighth (K-6, K-8), fourth through sixth (4-6), fifth and sixth (5-6), fifth through eighth (5-8), and sixth through eighth (6-8).

The variability of human development and the complexity of school organization begs the question, is there a best configuration for the developmental stage of sixth graders and the school environment in which we educate them? The purpose of this study is to explore the relationship between school configuration and academic and non-

academic outcomes of sixth grade students in both an elementary and a middle school environment to contribute to the literature addressing this question.

Background

We typically think of schools as academic institutions but because of the potential to reach great numbers of young people, schools have also become important places for social intervention. For this reason, social scientists, educators, and policy makers have considered school organization as a means to support individuals in human growth development (Steinberg, 2002). School organization refers to how schools structure grade span configurations, school size, and the allocation of resources to maximum learning (Rubenstein, Schwartz, Stiefel & Zabel, 2009). Grade configuration refers specifically to the number and range of grade levels that a school includes (District Administration, 2005). The subject of grade configuration and what constitutes the best learning environment for students is complex. It has been influenced by human development, psychology, sociology, and pedagogy. Much of the research has included middle grades (grades 5-9) where school organization has prompted a great deal of debate (Anfara & Buehler, 2005).

At the beginning of the twentieth century, school grade configurations in the United States began to change from an eight year elementary (grades 1-8) and four year secondary (grades 9-12) structure to an organization that included separate schools for middle grade (grades 7-9) students. This shift marked the start of the junior high movement (Manning, 2000). The junior high movement was prompted by growing concern about meeting the academic and developmental needs of students in this age group. During the 1960s more concerns emerged about whether junior highs were

actually meeting those needs. This again prompted a shift in school organization to a middle school model which generally served grades six through eight.

Since the early 1970s, middle schools have continued to replace junior high schools and become the predominant school organization for students in middle grades. According to MacIver and Epstein (1993) there are over 30 different school organizations serving students in grades pre-kindergarten through eight. A review of national data on grade configurations and school organizations since 1970 demonstrates the growth of middle schools in serving students in grades five or six through eight. According to the *Digest of Educational Statistics* for 2014 (National Center for Educational Statistics, 2016), the number of elementary schools (beginning with any grade below five and having no higher grade than eight) was similar in 1970–71 and 2000–01 (64,000 in 1970–71 and 64,600 in 2000–01), yet the number of middle schools was 462% higher in 2000–01 than in 1970–71 (11,700 vs. 2,100). Between 2002–03 and 2012–13, the number of all elementary schools rose by 2% to 66,700, while the subset of middle schools rose by 7% to 13,100.

Table 1, below based on figures available from the National Center for Education Statistics (2016) shows the grade span configurations in the U.S. for the 2012–2013 year. The trend toward middle grade configuration appears to remain strong with only 9.7% of schools in the pre-kindergarten, kindergarten, or first grade to eighth grade category and almost 20% in the grades four, five, or six to grades seven or eight category.

Table 1. U.S. Public School Grade Configurations – Number of Schools and Percentages of Configurations, 2012-13.

	PK, K or grades 1 to 3 or 4	PK, K or grades 1 to 5	PK, K or grades 1 to 6	PK, K or grades 1 to 8	Grades 4, 5, or 6 to grades 7 or 8	Other grade configurations	Total
Number of Schools	5,104	25,257	10,415	6,444	13,061	6,437	66,718
% of total schools	7.7	37.8	15.6	9.7	19.6	9.6	100

Source: *Digest of Education Statistics for 2014, 2016. Chapter 2: Elementary and Secondary Education.* Available online at <http://nces.ed.gov/pubs2016/2016006.pdf>

While middle schools remain the dominant structure for educating middle grade learners, there is renewed debate regarding how schools are configured (Hough, 2005; Pardini, 2002). Dissatisfaction with middle-level education has prompted new reform of middle-level grades. Yecke (2006) unleashed a harsh criticism of middle schools and the middle-level concept in her article, *Mayhem in the Middle*. Specifically, she asserts that the middle school model is plagued by its extreme emphasis on the social, emotional development of young adolescents that resulted in “anti-intellectualism.”

Recently a number of American urban school districts are turning away from the middle schools structure and increasing the number of elementary schools that continue through the eighth grade (Pardini, 2002). Massachusetts, Pennsylvania, Ohio, Tennessee, Oklahoma, Maryland, and New York have already started the conversion to kindergarten through eighth grade configurations (K-8), and eight additional states are reviewing the concept (Hough 2005; Pardini 2002). The rationale for the shift appears to be research on learning outcomes for students in middle grades (Blyth, Simmons, & Carlton-Ford 1983; National Center for Educational Statistics, 1989; Eccles & Midgley, 1989), increased crime in schools, and high dropout rates in high school (Blyth et al., 1983; Mac Iver & Epstein, 1993). Despite the positive support of middle level school advocates, several researchers continue to raise concerns over failed promises of middle schools. Specifically, they argue a negative impact on student outcomes as evidence that middle schools are failing.

Cook, MacCoun, Muschkin, and Vigdor (2008) researching whether sixth grade should be in middle or elementary schools, studied the impact of grade configuration on the end of sixth grade test scores and discipline incidents for North Carolina students.

While they noted that middle schools provided sixth graders an environment with more autonomy, the middle school configuration also brought younger students into more contact with older adolescents and had a significant negative impact on student behavior. This exposure to older, more mature students made it more likely for negative influences of older students on the outcomes of sixth graders. Their findings indicated that sixth grade students enrolled in middle schools were twice as likely to be cited for behavior infractions as sixth grade students in elementary schools. They concluded that placing sixth grade in a middle school environment increases behavior problems and reduces academic performance.

Bedard and Do (2005) drew similar conclusions. They reviewed academic and behavior outcomes from the National Center for Educational Statistics regarding Common Core data to research the impact of grade configuration on student outcomes. Specifically they researched Common Core assessments and on-time graduation rates for students in districts across the United States before and after adopting middle level school programs. They found evidence that students attending middle grades in a middle school environment had lower on time high school completion rates than students attending elementary schools terminating in grade eight (Bedard and Do, 2005).

However, Offenber (2001) in a study in Philadelphia reviewing similar outcomes drew different conclusions. In the Philadelphia study, Offenber studied a large sample of K-8 and middle schools to compare school performance and student achievement. Offenber compared school statistics on *SAT-9* scores. While he found positive results for the K-8 schools, Offenberger noted distinct differences in the school environments that may have impacted outcomes other than grade configuration. Offenber observed

that the K-8 schools were smaller in size, had fewer staff and students, included smaller attendance areas, and had a higher middle class student population enrollment than did the middle schools. These variables caused Offenbergl to conclude that grade configuration may not be a reason for different outcomes (Offenbergl, 2001).

More recently, Rockoff and Lockwood (2010) studied student outcomes in both middle and K-8 schools in New York. They found a significant decrease in reading and mathematics scores for students who attended middle school compared to students remaining in a K-8 school environment. They also observed that decreases were greater for students entering middle school with lower levels of achievement prior to transition. In addition to achievement, the study also indicated a decline in attendance rates for students attending a middle school compared to a K-8 school. The researchers noted that middle schools were more likely to serve larger populations of more diverse students, which may also have a negative impact on student outcomes. They concluded that while the complexity of variables impacting achievement of early adolescents did not indicate that middle schools were responsible for negative outcomes, they did end discussion asserting that the K-8 environment indicated positive outcomes for students involved in the study (Rockoff & Lockwood, 2010).

Weiss and Kipnes (2006) also considered the relationship between student outcomes for early adolescent and grade configuration. Specifically, the authors analyzed data from a large urban school district in Philadelphia that contained a similar number of K-8 schools and middle schools. Although there were differences noted in the socioeconomic characteristics of the students in the two school structures, there was little difference in student outcomes based on configuration. Student outcomes included

achievement, attendance, and suspension rates. The study found no difference on comparable academic or behavior measures between students enrolled in an elementary or middle school configuration. The results lead authors to remark that "...our findings offer little support for reformers seeking to improve students' performance in middle grades by eliminating middle schools" (Weiss & Kipnes, 2006, p. 265). The researchers concluded that middle schools were no more "detrimental to students' performance" (p.265) than elementary schools. Surprisingly, they note that they did not find differences where a body of previous research indicated they should.

Byrnes and Ruby (2007), also failed to identify a negative relationship between school configuration and student academic outcomes. They studied a sample of over 40,000 eighth grade students from ninety-five schools over a five year period from 1999-2004. Three cohorts were identified: "old K-8," for schools that had been configured for more than five years; "new K-8," for schools configured less than five years and middle schools configured with grades six through eight (Byrnes & Ruby, 2007, p. 109). The study explored the relationship between grade configuration and student academic outcomes. Mathematics and reading achievement was measured by comparing student performance on the Pennsylvania state assessment. The study controlled for population demographics and school characteristics. Overall, students in the old K-8 configuration had significantly higher achievement in both mathematics and reading; however the researchers also found that the old K-8 schools also had significantly lower minority and high-poverty enrollments. Class and grade size and student mobility was also far less in the old K-8 cohort. The researchers noted that the old K-8 cohort served a significantly different population than did the middle school cohort. After controlling for

demographics and school characteristics, the researchers saw no significant difference in mathematics or reading achievement. Their study indicates that academic achievement may be impacted by variables other than grade-level configuration (Byrnes & Ruby, 2007).

There are several challenges to the literature on school configuration. First, many of the studies compare students across different schools, districts, and states, thus effects of impacts are confounded by differences between school districts (Carolan, Weiss & Matthews, 2015). Secondly, most of the studies consider only half of the effect by focusing attention on the consequences of placing younger students with older students and neglecting the influence on behavior patterns of older students (Blyth et al., 1978). Finally, many studies rely on the single-variable statistical analysis; outcomes of different school configurations for particular dependent variables are evaluated one variable at a time, limiting validity (Blyth, Smith, & Hill., 1984). In none of the studies is there comprehensive assessment of detailed student information, classroom practice and teacher preparation. Most studies rely on administrative data or non-representative samples (Carolan & Chesky, 2012; Byrnes & Ruby, 2007).

Conceptual Framework: Stage-Environment Fit

The purpose of this study is to explore the relationship between school configuration and student academic and non-academic outcomes of sixth grade students attending school in two different school organizational environments. According to Lee and Smith (1995), understanding the relationship between school environments and early adolescence, requires a conceptual framework for thinking simultaneously about schools as contexts in which adolescent development takes place. This review uses a framework

that is based largely on a model suggested by Jacquelynne Eccles and Carol Midgley (1989). The framework is organized around two basic components: the developmental stage of the student, and the school environment in which the student develops. Stage-environment fit, views the match between the two dynamics to understand beliefs, school achievement and behaviors of the student (Eccles & Midgley, 1989).

Drawing on the principals of person-environment fit theory, Eccles and her colleague proposed viewing the relationship between stage and environment when considering early adolescents in the learning setting. According to person-environment fit theory (see Edwards, Caplin, & Harrison, 1998), behavior, motivation and mental health are influenced by the fit between characteristics individuals bring to their social environment and the characteristics of the social environments themselves. More specifically, the greater the needs of the individual are met in the environment, the better the fit, resulting in higher motivation and engagement of the individual. As applied to Eccles and Midgley's model, the fit between the needs and motivational orientation of the early adolescent and the demands, supports and characteristics of the school environment, influences the motivation, achievement, and engagement of the student. Early adolescents are not likely to do well on school outcomes if they are in an educational environment that does not meet their developmental needs. The greater the alignment between the two constructs, the more positive the impact on motivation, achievement and behavior (Eccles, Lord, & Midgley, 1991, Eccles, Wigfield, Midgley, Reuman, MacIver, & Feldlaufer, 1993; Eccles & Roeser, 2011).

Stage-environment fit also considers disruptions in the relationship, such as school transitions. For students in the early stages of adolescence, a transition from

elementary school to middle school can have a significantly negative effect on motivation and behavior. Because of the dramatic developmental change associated with adolescence, disrupting the school environment at the same time may increase disengagement and increase “problematic” (Eccles et al., 1993, p. 90) behavior.

However, in subsequent studies Eccles and her colleagues also found that implementing developmentally responsive practices in school environments can limit the disruption of transition and positively impact the fit between stage and environment (Eccles et al., 1991; Eccles & Roeser, 2009; Eccles & Wigfield, 1997).

Stage-Environment Fit provides an appropriate framework for the present study because of the focus on the developmental needs of early adolescents and the educational environments created by school structures. The framework encourages understanding the relationship that different school contexts may have on the outcomes of early adolescents.

Problem Statement

The extent to which grade configuration is significantly related to student outcomes is not clear. However, the current trend in some school districts is shift school organizations back to a kindergarten through eighth grade configuration. There is a concern that the simply shifting grade configurations for middle grade students may not achieve the desired effect (Anfara & Buehler, 2005; George, 2005; MacIver & Epstein, 1993; Yecke, 2006). Rockoff and Lockwood (2010) concluded that grade configuration may have a positive effect on student outcomes, while others (Byrnes & Ruby, 2007; Weiss & Kipnes, 2006) drew different conclusions. The research is inconsistent and confusing. A primary goal of this study is to contribute to the existing literature, therefore, the purpose of this two-group descriptive efficacy study was to explore the

relationship between school configuration and academic and non-academic outcomes of sixth grade students attending school in an elementary configuration compared to academic and non-academic outcomes of sixth grade students attending school in a middle school configuration.

Research Questions

The following research questions were used to analyze the relationship between academic and non-academic student outcomes of sixth grade students in two different school configurations.

Overarching Research Question #1: Is there a significant difference in the academic outcomes for students attending sixth grade in an elementary school configuration compared to students attending sixth grade in a middle school configuration?

Sub-Question 1a: Is there a significant difference in the mean scale scores of the NeSA-Reading assessment of students attending sixth grade in an elementary school configuration compared to the mean scaled score of the NeSA-Reading assessment of students attending sixth grade in a middle school configuration?

Sub-Question 1b: Is there a significant difference in the mean scale scores of the NeSA-Math assessment of students attending sixth grade in an elementary school configuration compared to the mean scaled score of the NeSA-Math assessment of students attending sixth grade in a middle school configuration?

Overarching Research Question #2: Is there a significant difference in the non-academic outcomes for students attending sixth grade in an elementary school

configuration compared to students attending sixth grade in a middle school configuration?

Sub-Question 2a: Is there a significant difference in the numbers of days absent from school for students attending sixth grade in an elementary school configuration compared to the number of days absent from school for students attending sixth grade in a middle school configuration?

Sub-Question 2b: Is there a significant difference in the numbers of days suspended out of school for students attending sixth grade in an elementary school configuration compared to the number of days suspended out of school for students attending sixth grade in a middle school configuration?

Sub-Question 2c: Is there a significant difference in the engagement responses of students on the Student Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the engagement responses of students on the Student Engagement and Climate Survey for students attending sixth grade in a middle school configuration?

Sub-Question 2d: Is there a significant difference in the climate responses of students on the Student Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the climate responses of students on the Student Engagement and Climate Survey for students attending sixth grade in a middle school configuration?

Definition of Terms

The following definitions are applicable to this study:

Attendance: Number of school days in which a student is absent from school.

Early Adolescence: A stage in human development, typically defined by the onset of puberty; individuals between the ages of 10 and 15.

Elementary School: A school that typically contains students enrolled in kindergarten (or pre-kindergarten) through fifth or sixth grade.

Engagement Survey: Twenty-eight item Likert response survey given to all sixth grade students in the research school district, in the spring of each school year.

Grade Configuration: the number and range of grade levels that a school includes.

Middle Grades: General term for fifth grade through eighth grade on the elementary through high school grade continuum.

Middle Level: General term for fifth grade through eighth grade on the elementary through high school grade continuum.

Middle School: A school between elementary school and high school, typically a self-contained building with students in grades five and/or six, seven, and eight.

Middle School Concept: An educational philosophy intended to meet the unique developmental needs of early adolescents; organizationally in a structure of any combination of grades five through eight that uses developmentally responsive curriculum and practices.

Nebraska State Accountability – Mathematics (NeSA-M): The State of Nebraska compulsory test of math for all students in grades three through eight and eleven.

Nebraska State Accountability – Reading (NeSA-R): The State of Nebraska compulsory test of reading for all students in grades three through eight and eleven.

School Organization: An organizational pattern of grade levels, school and class size, and the allocation of material and human resources within a school.

Suspension: Number of school days or partial days the student is suspended out of school as a behavior consequence.

Assumptions

This study has several strong features. All sixth grade students in the research school district complete the NeSA-R/M and the Student Engagement Survey in the spring-term of the school year. All students in this study have been continuously enrolled from the beginning of fifth-grade through the end of sixth-grade in the research school district. The academic and non-academic data collection systems from the study schools were consistent with one another. Further, students who did not complete both academic and engagement assessments in the sixth grade were excluded from the study.

This study assumes that comparable kind and quality of curriculum and instruction were present in both configurations of schools.

Limitations

This descriptive study was limited to 1430 sixth grade students who attend school in district of over 52,000 students with a 74% reported free or reduced lunch status in an urban public school district. The study subjects represented naturally formed sample populations of sixth grade students. Students were not randomly assigned to different school configurations, but rather were assigned through the research districts' school

choice process. Gender, socioeconomic status, special education, and English language levels were not delimited in this study; however students receiving education in self-contained classrooms were excluded. The delimitations and limitations may reduce the utility and generalizability of the study results and findings.

Delimitations

The instrument used to collect academic data in this study was the Nebraska State Accountability (NeSA) assessments for reading and mathematics administered by classroom teachers during a four-week window in April of 2016 in the research school district. NeSA is given each year in Nebraska to students in grades three through eight and eleven. This study was delimited to sixth grade students in the research school district. It was further delimited to the inclusion of students for which both NeSA-R/M data and Student Engagement Survey data were available for sixth grade students. Academic outcomes were defined by performance on a single indicator, NeSA-R/M. To narrow the scope of the research, only schools with configurations of prekindergarten or kindergarten through grade six and middle schools with grade six following their current grade configuration for at least five years were included in the study. These delimitations imply that the research cannot be generalized to other grade levels in the research school district, or to other schools with sixth grade in other districts.

Significance of the Study

Decades of school reform initiatives have targeted multiple aspects of school organization and structure. One middle level reform strategy has been shifting the grade configurations of schools attended by early adolescent students. This study has the potential to contribute to research, practice, and policy. It is of significant interest to the

research school district as they consider expanding school configuration for middle grade students. The study is also of interest to families and students as they consider school environment and educational practice in the annual school choice process in the resident school district.

Outline of the Study

The dissertation consists of a total of five chapters. The first chapter provides background and the rationale for the research effort. It includes the statement of the problem, purpose of the study, as well as operational definitions to understand the terms of the study. Also in Chapter 1 is a theoretical framework to guide the study, followed by the research questions guiding this study and the potential significance for the field of education. Chapter 2 provides the foundation for this study through examination of literature on early adolescence characteristics and development and historical educational organizations for adolescents. Chapter 3 discusses the research design and methodology used to conduct this study. The methodology includes data collection, analysis procedures, and a summary. Chapter 4 will provide the results of the study with descriptive and inferential analyses of sixth grade outcomes in an elementary environment and sixth grade outcomes in middle school environments. Chapter 5 provides the conclusions of the findings, discussion, and suggestions for future research.

Chapter 2 Review of Literature

Adolescence is the developmental period between childhood and adulthood. G. Stanley Hall, developmental psychologist, was the first to consider adolescence as a distinct period of scientific study. Further, he acknowledged that the storm and stress associated with the developmental period was aggravated by the failure of societal institutions, such as schools, to recognize the true nature and potential challenges of adolescents, and to adapt these institutions to support development (Arnett, 1999). In the century since Hall's work, the debate over adolescent development and the role of schools and the organizational structure of such environments has been an on-going subject of research and school reform. This chapter aims to define adolescence by exploring the unique characteristics associated with the developmental period, while also considering the context of school, one of the primary environments in which these individuals develop.

Stage-Environment Fit

The purpose of this study is to explore the relationship between school configuration and student outcomes for sixth grade students in two different school organizational environments. According to Lee and Smith (1995), understanding the relationship between school environments and early adolescence, requires a conceptual framework for thinking simultaneously about schools as contexts in which adolescent development takes place. This review uses a framework that is based largely on a model suggested by Jacquelynne Eccles and Carol Midgley (1989). The framework is organized around two basic components: the developmental stage of the student, and the school environment in which the student develops. Stage-environment fit, views the

match between the two dynamics to understand beliefs, school achievement, and behaviors of the student (Eccles & Midgley, 1989).

Drawing on the principals of person-environment fit theory, Eccles and her colleague proposed viewing the relationship between stage and environment when considering early adolescents in the learning setting. According to person-environment fit theory (see Edwards, Caplin, & Harrison, 1998), behavior, motivation, and mental health are influenced by the fit between characteristics individuals bring to their social environment and the characteristics of the social environments themselves. More specifically, the greater the needs of the individual are met in the environment, the better the fit, resulting in higher motivation and engagement of the individual. As applied to Eccles and Midgley's model, the fit between the needs and motivational orientation of the early adolescent and the demands, supports, and characteristics of the school environment, influences the motivation, achievement, and engagement of the student. Early adolescents are not likely to do well on school outcomes if they are in an educational environment that does not meet their developmental needs. The greater the alignment between the two constructs, the more positive the impact on motivation, achievement, and behavior (Eccles et al., 1991, Eccles et al., 1993; Eccles & Roeser, 2009).

Stage-environment fit also considers disruptions in the relationship, such as school transitions. For students in the early stages of adolescence, a transition from elementary school to middle school can have a significantly negative effect on motivation and behavior. Because of the dramatic developmental change associated with adolescence, disrupting the school environment at the same time may increase

disengagement and increase “problematic” (Eccles et al., 1993, p. 90) behavior.

However, in subsequent studies Eccles and her colleagues also found that implementing developmentally responsive practices in school environments can limit the disruption of transition and positively impact the fit between stage and environment (Eccles et al., 1991; Roeser & Eccles, 1998; Eccles & Wigfield, 2002).

Stage: Adolescence

In 1904, American psychologist G. Stanley Hall identified the period between childhood and adulthood as *adolescence*; a period in human development that was extremely difficult, tumultuous, and dominated by “storm and stress” (1904, Vol. 1, p. xiii). The dominant concepts of storm and stress were conflict with parents, mood disruptions, and risky behavior (Burnham, 1889). Hall portrayed adolescence as a universal period for all young people, manifested through emotional and behavioral upheaval, before establishing more stability in adulthood (Arnett, 2006; Arnett, 1999). In his seminal work, *Adolescence: Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education*, Hall attributed the disturbance of this period to be the result of biological and cultural influences that created difficulty for both the individual, as well as those around them (Arnett, 1999).

According to Hall (1904):

In the individual, adolescence is marked by profound upheaval of all the elements of the mental life, by the sudden influx of new interests, deepened feelings, and of widened outlook upon life. New relations among the mental elements are established, and the mind seems to find a new center. (p. 77)

Hall's work was exhaustive and contained research, speculation, and commentary on nearly every aspect pertaining to this period of human development for individuals between the ages of fourteen and twenty-four. Characteristics of adolescent development were rapid biological and cognitive development, resulting from entrance into puberty. During this period, individuals often demonstrated depressed mood, greater participation in risky behavior, and increased social interaction with peers. Hall contended that the confluence of physical, intellectual, and emotional growth made these years erratic, and the variability of individual development made entrance into adolescence unpredictable (Arnett, 2006).

Hall's *Adolescence* continues to be one of the seminal works of the early history of psychology (Arnett, 1999). While the definition of an adolescent has changed with the advent of additional research and medical advancement, many of his early writings about young individuals in this period of rapid development continue today. Two significant changes include the age of on-set and the breadth of the stage.

According to Hall, adolescence began with the on-set of puberty and lasted into adulthood. Hall identified this period as coinciding chronologically with individuals between ages 14 to 24 (Hall, 1904). Contemporary social scientists however, have expanded the definition to include ages 10 through the early twenties. According to Blyth, Simmons, and Bush (1978) the challenge to using the on-set of puberty to mark the beginning of adolescence is twofold: 1- research indicates that individuals are reaching puberty earlier than at the turn of the century, and 2- the variable rate of physical maturation indicates that there could be as great as a six year variation in when some individuals enter puberty (Blyth et al., 1978; Tanner, 1972; Brough, 1995).

The second significant evolution in the theory of adolescence is the differentiation into three phases: early adolescence, which includes ages 10 to 14; middle adolescence, from about ages 15 to 17; and late adolescence, from about ages 18 to 22 (Hillman, 1991). Not coincidentally, these divisions correspond to the way in which many societies, including the United States, group individuals in educational institutions. For many, early adolescence parallels the transition into middle school, while middle and late adolescence correspond to high school and college respectively (Steinberg, 2002).

Stage Theory: Biological Development

While adolescence evolved as a stage in life-span theory, Hall's contention that the turbulence of adolescence is biologically determined and therefore unavoidable, found its way into other psychosocial development theories. Four of these theorists have had a great influence in the study and understanding of adolescence: Sigmund Freud (1938), Erik Erikson (1951), Jean Piaget (Inhelder & Piaget, 1958), and Lawrence Kohlberg (1981).

In his work, *An Outline of Psychoanalysis* (1938), Freud asserted that development was best understood in terms of psychosexual conflicts that arise at different points in development. According to Freud, individuals are motivated by instinctual drives associated with sexual development and the hormonal change in puberty disrupts the psychic balance achieved during childhood, in the psychosexual stage called *Latency*. Freud identifies the developmental tasks of adolescence to be the psychological detachment and independence from parents. The drive focus of adolescence is attention on developing pleasure derived from gratification in external activities and success in relationships with others, success in school, and hobbies (Freud & Brill, 1938).

Like Freud, Erikson also believed that internal, biological developments move an individual from one developmental stage to the next (Steinberg, 2002). *Childhood and Society* (1950), Erik Erikson's theory of psychosocial development expanded on Freud's stages of psychosexual development by placing greater emphasis on social contexts of development. Erikson identified eight stages of development. The core concept in his theory is the development of identity, which becomes the major task of adolescence. In order to develop a healthy ego-identity the individual must receive consistent and meaningful recognition for accomplishments (Erikson, 1968).

Stage Theory: Cognitive Development

Freud and Erikson both emphasized emotional and social development that coincided with the biological development of adolescence. For Piaget, development could best be understood by examining the changes in thinking. Piaget's theory of cognitive development identified stages in human development related to the development and utilization of intelligence. In his seminal work, *The Origins of Intelligence in Children* (1952), Piaget identifies four stages of intellectual development. The fourth stage, *Formal Operations* thinking coincides with the development of cognition associated with brain development in early adolescence and puberty. Individuals in this stage of development are capable of hypothetical and deductive reasoning and begin to think abstractly. Early adolescents demonstrate the ability to problem solve more systematically than they did previously by applying logic, trial-and-error, and consideration for outcomes and consequences in decision-making (Inhelder & Piaget, 1958).

Stage Theory: Moral Development

Kohlberg's stage theory of Moral Development, like Piaget's theory, is also considered to be a cognitive theory. Kohlberg believed that individuals developed their moral principles primarily by thinking about them. In his work, *Essays on Moral Development: The Philosophy of Moral Development*, Volume 1 (1981), Kohlberg expanded Piaget's stages into six stages, organized into three levels. The second level, *Conventional Morality*, is typical of adolescent and adult thinkers. There are two stages (stage three and four) associated with this level. The third stage is called *Good girl/boy*. In this stage the individual is motivated by approval of others closest to the individual. It is driven by good intentions determined by social consensus. The fourth stage, noted as *Law and Order*, driven by authority and obedience to social order. The sense of order becomes generalized beyond those close to the individual to others in society at large (Kohlberg, 1976).

Criticism of Stage Theory

Criticism of the stage theories today is that they have not kept pace with the development of adolescent study. While Hall's definition of adolescence continues to be universally accepted, psychological development and functioning of adolescence continues to expand as new themes and guiding frameworks transform the research landscape (Steinberg & Morris, 2001). Specifically, the latter half of the twentieth century saw research on adolescence expand to include more contextual impacts of genetic and environmental influences on development (Arnett, 2006). Environmental influences such as socioeconomic status, nutrition, diet, health, and nutrition have been identified as factors influencing the onset and progression of puberty (APA, 2002;

Steinberg, 2002). Additionally, research on the cultural effects on adolescence has also been shown to impact puberty. A study of 17,000 healthy girls ages 3 to 12 found that 6.7% of Caucasian girls and 27.2% of African-American girls were showing some signs of puberty by age 7 (Kaplowitz & Oberfield, 1999).

In general, puberty is now believed to begin almost three years earlier than when Hall first identified adolescence as a developmental stage (Brough, 1995; Juvonen, Le, Kagnoff, Augustine, & Constant, 2004; APA, 2002; Thornburg, 1982). As previously mentioned, the variation in on-set and rate in which one progresses through puberty can make adolescence confusing to view as one developmental stage. Today, it is generally accepted to view adolescence in three distinct phases: early, middle, and late adolescence. For the remainder of this review, we will focus attention on the first and most fundamental phase of development; early adolescence.

Stage: Early Adolescence

One challenge to the study of adolescence is determining when it begins, when it ends, and the markers to monitor progression throughout the stage (Hillman, 1991). Many social scientists recognize that a great deal of physical, cognitive, and emotional growth occur during the adolescent years, and advocate for viewing development through three significant phases, rather than one homogenous stage (Steinberg, 2002). While Hall identified the beginning of adolescence to be around the chronological age of fourteen (1904), more recent study has identified earlier onset of puberty to be associated as early as age ten (Euling, Selevan, Pescovitz, & Skakkebaek, 2008). Generally, today, early adolescence is recognized as individuals between the ages of 10 to 14 (NMSA, 2003;

Thornburg, 1980; Hillman, 1991; Juvonen et al., 2004; Roeser, Eccles, & Sameroff 2000).

The onset of puberty marks the most significant period of dramatic change in human development, outside of infancy (Lipsitz, 1979). What makes this developmental period so dramatic is not only the scope, variability, and rate at which individuals develop, but also the awareness of change and the active role he or she plays in adjusting to it. Early adolescence is distinguished by changes in physical growth and cognitive development, which also influences socio-emotional functioning, and the development of identity.

Physical Changes

With the onset of puberty, most individuals begin to experience profound physical and biological changes. While human beings continue to change throughout the lifespan, the change adolescents experience is unparalleled. Joel Milgram, in his sixth grader profile (in Lounsbury & Johnston, 1988) illustrates the magnitude of transformation by imagining a 35-year old adult comparing his current self to a photograph of himself taken three years earlier. While there may be slight differences in hair or clothing style, the photo image is clearly recognizable. Milgram then offers another illustration, only this time the subject in comparison is an 11 or 12-year old girl, comparing herself to a photo of herself taken a few years previously as a third grade student. Likely, the resemblance is unrecognizable (Lounsbury & Johnston, 1988).

As individuals reach puberty, the increase in hormone production prompts rapid physical growth, development of primary and secondary sexual characteristics and maturation (Euling et al., 2008; Clark & Clark, 1993; Hill, 1983). Because of the

tremendous variation in on-set, individuals of the same gender and chronological age are likely to be at different physical points of development throughout early adolescence (Blyth & Traeger, 1983).

The growth spurt which involves rapid skeletal and muscle growth usually begins for girls on average between ages 10 to 12 and for boys between ages 12 to 14 (Wigfield, Lutz, Wagner, 2005; Eccles & Wigfield, 1997; APA, 2002; Thornburg, 1980). For most adolescents, sexual maturation involves achieving fertility and the physical changes to support fertility. For females, that includes developing breast tissue and the beginning of menses (Kaplowitz & Oberfield, 1999; APA, 2002; Euling et al., 2008; Eccles & Wigfield, 1997; Hill, 1983). For males, sexual maturation is associated with enlargement of the testicles and first ejaculation (APA, 2002; Kaplowitz & Oberfield, 1999; Eccles & Wigfield, 1997; Hill, 1983). Secondary sexual characteristics include the emergence of pubic hair, body hair (boys), and the filling out of their bodies (APA, 2002; Eccles & Wigfield, 1997; Steinberg & Morris, 2001; Clark & Clark, 1993; Blyth & Traeger, 1983).

Cognitive Development

At the same time the body is undergoing a dramatic physiological transformation, hormone production also prompts brain development and a rapid period of cognitive and intellectual growth. Characteristic of cognitive development is the transition to formal operational thinking (Hill & Palmquist, 1978). During this stage, early adolescents increase their ability to think abstractly, consider hypothetically, engage in more elaborate problem-solving, and think more retrospectively (Eccles & Wigfield, 1997; Clark & Clark, 1993; Thornburg, 1980; Farrington et al., 2012). How individuals process information also significantly shifts during early adolescence. Young adolescents

demonstrate increasing knowledge and interest in a variety of different topics and subject areas. They increase their ability to utilize multiple approaches to problem-solving, as well as apply logic to new learning situations, and increase awareness of their own strengths and weaknesses (Thornburg, 1983; Eccles & Wigfield, 1997; Blackmore, Burnette, & Dahl, 2010). Steinberg (2005) identifies brain development as a lengthy process. While it begins with pubertal maturation, it is not limited to the early adolescent period. This complex process includes varied development of different parts and functions of the brain that become integrated over the span of adolescence (Steinberg, 2005). During early adolescence, individuals experience increased reasoning and information processing, however later adolescent growth marks the development of self-regulation and control capacity. This variability in development may explain why early adolescents engage in risky behaviors. According to Steinberg (2002), while adolescents can use adult-like cognitive processing, their lack of experience, exposure, and supervision can cause them to evaluate consequences differently than adults (Steinberg, 2002; APA, 2002).

Social-Emotional Change

While both physical and cognitive growth are the result of physiological development, another significant characteristic associated with early adolescence is the change in social-emotional behavior, manifested in changing relationships with peers and family. As adolescents enter puberty, individuals begin to detach from parents and develop more significant relationships with peers (Blyth & Traeger, 1983; Lohman, Kaura & Newman, 2007). Young adolescents start to reach out to others outside their families for companionship, approval and social engagement. Peer groups become more

permanent (Thornburg, 1982). Even the choice in friends, demonstrates a shift in preference and thinking; whereas in childhood friendships were formed out of convenience and proximity, early adolescents appear to select friends based on similarities and interests (Eccles & Wigfield, 1997). According to Clark and Clark (1993), peer influences become strongest in early adolescent's lives between the ages of 11 to 17. Peer loyalty becomes significantly more important and friendships begin to shift from same sex friends to friendships with both sexes (Clark & Clark, 1993). Eccles & Wigfield (1997) suggest that friendships of early adolescents become more focused on meeting intimacy needs, which indicates a departure from the relationships characteristic of younger children.

Familial relationships also undergo significant change, especially between the early adolescent and parents. As individuals become more mature, they often seek more independence and autonomy, and may begin to question family rules (Meeus, 2016; Masten, Juvonen, & Spatzier, 2009). As they strive for separation from parents, there is often an increase in conflict between the two (Hillman, 1991; Arnett, 1999). Conflict centers on issues such as dress and appearance, chores, and dating. Distancing in relationships with parents is typical and considered one of the developmental tasks of the early adolescent stage (Hill, 1983; Lipka, 1997; Hillman, 1991; Masten et al., 2009). Hill and Palmquist (1978) point out that increasing alliances with peers however, does not necessarily indicate a rejection of parental authority, but rather it demonstrates development of autonomy and growing competency. While peers seem to have more influence on present issues (social activities & behaviors), parents continue to have

significant influence over future concerns (careers, education, and financial) (Hillman, 1991; Eccles & Wigfield, 1997; Meeus, 2016; Masten et al., 2009).

Identity Development

As early adolescents integrate the changing domains of physical, cognitive, and social development, they also begin to think more rationally about themselves. The dramatic physical changes that accompany puberty prompt the adolescent to engage in self-evaluation. Unlike the child, the developing adolescent has the cognitive capacity to think about and process the changes occurring and consider the person he or she is becoming (APA, 2002; Beane, 1983). Changes in their social and interpersonal worlds compel them to figure out what matters most to them, and how that fits with who they would like to be (Steinberg, 2003).

Identity development, demonstrates emerging self-concept and self-esteem (Beane, 1983; Lipka, 1997; APA, 2002). Lipka (1997) defines self-concept as the “perception(s) one has of oneself in terms of personal attributes and various roles” (p. 32) while self-esteem is the “evaluative assessment one makes regarding personal satisfaction with roles, attributes, and quality of one’s performances” (p. 33). Newfound attention to self causes early adolescents to compare their individual development to perception of others and stereotypes to support identity development (Thornburg, 1983).

The timing and rate at which one enters puberty and the shifting of importance of peer relationships, can have a significant impact on developing self-esteem and can also profoundly impact behavior. Lipka (1997) argues that for early adolescents developing physically around the same time with a significant cohort of peers tends to positively impact to self-esteem. Yet for an early or late developer, the impact can have a negative

effect on self-esteem and may lead to potentially negative behaviors (Lipka, 1997; Carnegie Council on Adolescent Development, 1989). According to Thornburg (1983) the variability of development prompts many early adolescents to turn to stereotype images created by media to define what they believe they should look and act like. Because, much of what they observe is emphasized by physical attributes, early adolescents tend to obsess on personal appearance (APA, 2002). Males identify strongly with a “masculine” (Thornburg, 1983, p. 82) look characterized by height, shoulder width, and physical proportions, while females relate to a “feminine” (p. 82) image illustrated by development of hips, breasts, legs, and waist. Media emphasis on physical attributes reinforces inappropriate stereotypes at an age when early adolescents are both vulnerable and impressionable (AMLE, 2010; APA, 2002; Thornburg, 1983). Both Self-concept and self-esteem strongly influence the behavior of the early adolescent and contribute to the formation of their identity.

Steinberg (2002) indicates that the task of identity development in the broader stage of adolescence is not to achieve a “final state” of identity but rather to begin to establish a mature sense of self (p. 279). Because of the variability and rapidity of early adolescence, identity development in this phase is in initial formation, where individuals begin to tryout aspects of who they may become (Phinney & Goossens, 1996). While Hall, Freud, Erikson and others focused study on the physiological growth of individuals related to identity development, more recent analysis has considered cultural and environmental influences as well (Steinberg & Morris, 2001; Arnett, 2006; Eccles et al., 1991). Urie Bronfenbrenner, developmental psychologist, offers a more *ecological systems* perspective of human development (Steinberg, 2002). According to

Bronfenbrenner (1979), we cannot understand human development without considering the environment or context in which development takes place (Bronfenbrenner, 1979). For this reason, we must consider the second component of our framework a significant environment in which adolescents develop; the school setting.

School Environments for Adolescents

Not only are schools the primary educational setting for adolescents in America, they also play a significant role in defining the individual's social world and in shaping the adolescent's developing sense of independence and identity. Because the organization of a school affects student's day-to-day experiences, variations in school organization can have a profound impact on adolescent development. Central to school organization, is the grouping of grade levels, or school configuration.

Elementary and Secondary Schooling: 8 – 4. School configurations have changed since the beginning of compulsory education. According to educational historians, Gruhn and Douglass (1971) there does not appear to be any evidence that early schools “were influenced in their origin and early development by any thoroughgoing study of what grade arrangement would be best for the physical, social, psychological, and intellectual development of children...” (p. 7). At the onset of compulsory public education in the United State, rural schools were primarily structured as one-room school houses, serving small numbers of heterogeneous learners of different ages, academic needs and development (Baughn, 2012). In larger urban populations, schools tended to separate students into elementary school (which held eight grades; first through eighth) and secondary school (which held four grades; nine through twelve) (Kurtze, 1995; Gislason, 2009; Gruhn & Douglass, 1971). While there were other early school grade

configurations, by the mid-nineteenth century, the eight-grade elementary and four-grade high school (8-4) became the standard organization in public schools (Manning, 2000; Cuban 1992; Gruhn & Douglass, 1971; Brough, 1995; Juvonen et al., 2004).

By the end of the nineteenth century, industrialization brought with it challenges created by increased immigration, rapid urbanization, demand for a better educated workforce and calls for reorganization of the 8-4 school system (Brough, 1995; Van Til, Vars, & Lounsbury, 1961; Elovitz, 2007, Cuban, 1992; Juvonen et al., 2004). By the turn of the century, educators advocated for a change in the secondary curriculum. While previously, secondary schools were viewed as offering intellectual training for small numbers of the social elite, changes in American society prompted appeals for expanded training for greater numbers of students to prepare for work and life in a modern society (Gruhn & Douglass, 1971; Cuban, 1992; Juvonen et al., 2004).

Expanded Secondary Curriculum. Organized leadership in public education was strongly influenced by the National Education Association (NEA) whose membership consisted predominantly of college and university administrators (Gruhn & Douglass, 1971; Cuban, 1992). It was not uncommon for college administrators to guide secondary education because of the importance of high schools as college preparatory programs (Gruhn & Douglass, 1971). In 1888, Harvard University President, Charles Elliot, also president of the NEA, along with colleagues from the NEA's *Committee of Ten on Secondary Schools* argued that the latter years of primary schools should be reorganized to introduce college preparatory curricula to students at an earlier age. Specifically, they recommended restructuring the eight grades of elementary and four grades of high school to six years in elementary and six years in secondary school (6-6), starting secondary

education in the seventh grade (Manning, 2000; Sailor, 1986; Toepfer, 1997; Cuban, 1992). While Elliot and his colleagues did not appear to prompt widespread educational reform, they did focus attention to the transition of students between elementary and high school. It was around this same time that G. Stanley Hall began to advance his concept of adolescence as a distinct stage in human development.

Separate Schools for Adolescents: 6-3-3. At the same time, the NEA began advocating for reorganization of the secondary school structure; Hall published his seminal work, *Adolescence*. In his work, Hall also advocated for changing school structures to better meet the needs of students. Because of the unpredictable differences in intellectual, emotional, and physical development, according to Hall, schools as they were currently organized; their curriculum and instruction were mismatched with adolescent development (Cuban, 1992; Arnett, 1999). This same philosophy continued to receive attention from the NEA.

Two additional efforts on the part of the NEA contributed significantly to the reorganization of secondary education: the 1913 *Committee on the Economy of Time* and the 1918 *Commission on Reorganization of Secondary Education*. The 1913 committee report proposed restructuring school grade configuration from a 6-6 organization, as was previously proposed the to Elliot committee, to a six year elementary experience, followed by three years in a junior high school structure, and ending secondary education with three years of senior high school (6-3-3 model) (Brough, 1995; Pate & Muth, 2003; Juvonen et al., 2004). Five years later, the NEA *Commission on the Reorganization of Secondary Education* released the most significant document of the era, titled *Cardinal Principals of Secondary Education* (1918). The Commission reported that the eight years

given to elementary education had not been effective, and the last two in particular had not been well adapted to the needs of the early adolescent (National Education Association, 1918; Van et al., 1961). The *Cardinal Principals* provided a framework for schools that covered multiple aspects of students' lives. According to Gruhn & Douglass (1971) The *Cardinal Principals* charged schools with the responsibility to foster not only students' academic growth, but also their moral, social, and physical development. Because of the comprehensive recommendation of the *Cardinal Principles*, it has "... continued from 1918 to the present time as the most widely accepted statement of objectives for secondary education in the United States" (p. 71).

In response to scientific research regarding adolescent development and attention of school reorganization, in 1909, educational reformers in Columbus, Ohio opened Indianola Junior High School. Indianola is credited with being the first school in the United States organized specifically to support the learning needs of adolescent students in middle-grades between elementary and high school (Lounsbury, 2009; Manning, 2000). Indianola Junior High was configured to serve students in grades seven through nine. In addition to implementing programs to support the developmental needs of adolescents, the goal was to structure an environment that would ease the transition from elementary to high school. Like the high school structure, Indianola followed a "departmentalized" (Mizell, 2005, p. 14) structure, where teachers taught primarily in one content area. The curricular program was designed to provide both academic and vocational training to support both college bound students and individuals heading into the job market (Manning, 2000).

The Junior High Movement

With growing attention to adolescent development and the emergence of separate schools for adolescent students (see Cuban, 1992, for discussion of similar efforts after Ohio in California, New York, Kansas, and Illinois), expansion of the junior high model was rapid (Table 1). By 1945, the separate junior high school, configured to include grades seven through nine, became the predominant school organizational structure in American schools (Lounsbury, 2009). This predominance continued for the next quarter century. By the early 1960s the number of junior high schools had grown rapidly to more than 7000 (Pate & Muth, 2003). In that same year, 80% of high school graduates had attended an elementary school, followed by a junior high and a three-year high school (Alexander & McEwin, 1989). By the sheer numbers, it appeared that the junior high school movement had taken a strong hold on American public education.

Table 2 Educational Enrollment 1890-1985

	Percent Enrollment Selected Years					
	1890	1900	1920	1940	1970	1985
High school	6	10	30	70	90	95

Figures indicate percentage of 14-17 year-olds in the United States enrolled in high school in the years indicated. (Steinberg, 2002, p. 197)

Junior High Criticism. However, from its beginning, the junior high movement faced concerns regarding the ability of the program to address the needs of *early adolescents* (Eichhorn, 1977; Van et al., 1961; Clark, Slate, Combs, & Moore, 2014). Critics argued that junior highs were merely extensions of high schools. The instructional program for many mirrored the high school program of studies; including grading practices, class sizes, and organization (Cuban, 1992). The impersonal climate created by following a departmentalized structure that emphasized content rather than integration, was argued as more closely aligned with the developmental needs of older adolescent students (Lounsbury, 1960; Milgram, 1994; Brough, 1995; Juvonen et al., 2004). Manning and Allen (1985), attribute the decline of the junior high movement to lacking a clear structural rationale. Rather than implementing an innovative program tailored to the needs of the adolescent, junior high schools created a place for early adolescents to “wait” (Manning & Allen, 1985, p. 25) between the elementary and high school. Further, rather than creating a “bridge” to support young adolescents in the transition from elementary to high school, Eichhorn, (1968) summed up the junior high program as, “no more than a vestibule added at the front door of the high school” (Eichhorn, 1968, p. 26).

School Environments for Early Adolescents

By the 1960s, growing dissatisfaction with the junior high movement gained support from a growing body of research about adolescent growth and development. Social scientists in the 1960s began reporting that children were maturing at an earlier age (Tanner, 1972). Brough (1995) reported that an eighth grader in the 1960s, biologically resembled a ninth-grader at the turn of the century. Developmental

psychologist began writing about early adolescence as a separate phase from older adolescence, with unique developmental and educational needs (Lipsitz, 1979; Thornburg, 1983; Clark & Clark, 1993; Steinberg, 2002).

One of the first practitioners of the emerging movement, Donald Eichhorn, advocated for adoption of a program that followed a unique curricular approach (Brough, 1995). Eichhorn's socio-analytical model was rooted in the physical, mental, social, and cultural characteristics of adolescent development (Toepfer, 1997). Eichhorn described this period of development as "transescence" (Eichhorn, 1968, p. 111), to include students usually found in grades six through eight who are in the same transitional phase of life (Eichhorn, 1968, p.111). The transescence period starts prior to the onset of puberty and extends through the early stages of adolescence (Eichhorn, 1968; Eichhorn, 1977). Because of the irregularity of puberty, Eichhorn advocated that the academic curriculum needed to be integrated to better address the variance in physical, social, emotional, and intellectual development of transescence (Eichhorn, 1968). The term transescence later became synonymous with the early adolescent phase (Thornburg, 1980).

Other proponents of reform, critical of the alignment with the high school program, began advocating for the moving of ninth grade to high school and adding sixth grade in its place (Brough, 1995; McEwin, 1992; Clark & Clark, 1993). However, as Clark and his colleagues (2014) point out, the support for reorganization of junior high schools may have been based more on structural decisions rather than consideration of the needs of early adolescent students. By the mid-1960s declining enrollments in high schools and overcrowding at the elementary level, a result of the baby boom of the 1950s,

prompted civic and school leaders to look at grade configuration as means of addressing the structural concern (Brough, 1995; Clark et al., 2014).

The Middle School Movement

In 1963, while delivering an address at Cornell University, William Alexander, known as the “Father of the Middle School Movement” (McEwin, 1992; Pate & Muth, 2003) first used the term *middle school* while speaking about what junior high schools should look like, and how they should operate. Specifically, Alexander identified what he perceived as positive characteristics of the junior high school that should be retained, and recommendations for improvements. He suggested the concept of junior high school be changed to “middle school” (Alexander, 1995, p.217) with a focus that was more responsive to the needs of younger adolescents. He advocated moving the ninth grade to the senior high school and moving grades five and six to the middle school. Reconfiguring middle grades for students ages 10 to 15 supported transitional programming he identified as more appropriate for students in the early adolescent period of development (Alexander, 1995). The concept of a school, for early adolescents resonated with many critics of the junior high school (McEwin, 1992).

While Alexander’s encouragement did not specifically call for reform, he challenged educators to revitalize the mission that had started at the turn of the century. Soon after Alexander’s speech, there began similar calls for aligning academic programs to developmental research (Eichhorn, 1977; McEwin, 1992; Lounsbury & Vars, 2003).

Junior High versus Middle School

While the emerging concept of a middle school appealed to many who had grown dissatisfied with the junior high movement, it was not initially widely adopted. Toepfer

(1997) credited the middle school concept with initiating a “turf war” (p. 170) between some junior high and middle school proponents. On one side of the debate were advocates for a subject-centered, departmentalized plan, and on the other were supporters of the student-centered program that included an integrated curriculum (Toepfer, 1997; Clark & Clark, 1993). The debate between the two factions did not sideline the middle school movement, as more fifth through eighth and sixth through eighth grade programs emerged, although it may have delayed the effort from taking a stronger hold earlier (Toepfer, 1997; Lounsbury, 2009; Milgram, 1994).

The middle school concept envisioned an academic program that supported students as they transitioned to the more challenging rigor of high school, while supporting the developmental transition from childhood into adolescence (Alexander, 1995; George & Alexander, 2003). These goals were nearly identical to those previously identified for the junior high movement. The difference, according to George and Alexander (2003) is recognizing the “unique and transitional,” (p. 2) nature of the learner while unifying the whole K-12 educational experience. The middle school concept structured both teaching and learning around an interdisciplinary, developmentally responsive curriculum that supported learning through exploration, experience and relationships. Instructional strategies in middle schools included interdisciplinary teaming, flexible scheduling, fostering student and adult relationships, proactive school counseling support, and a student advisory program. Since its conception, the middle school movement also advocated for teacher training and certification specific to middle grades. Advocates encouraged training and hiring of teachers who understood the developmental characteristics of early adolescents, who used differentiated instruction,

and utilized developmentally responsive practices with early adolescent learners (AMLE, 2010; George & Alexander, 2003; McEwin & Greene, 2010).

By 1990, with continued support from educational psychology and a more clear definition of early adolescence, proponents of both junior high and middle schools began to reach consensus regarding educational reform. Adopting the term “middle level education” (Toepfer, 1997, p. 170) to include programming for students in middle grades, rather than the structural organization of schools, seemed to ease tension between junior high and middle school advocates. In 1990, the number of traditional junior high schools (grades 7 to 8 or 9) in the United States, declined 60% nationally since 1970, while the number of middle schools (grades 5 or 6 through 8) increased by almost 300% (National Center for Educational Statistics, 1991). It appeared that separate schools for middle grade students had become a fixture on the educational landscape. Although there continues to be significant social, economic and political changes in society, a central focus of educational philosophy and practice remains meeting the developmental needs of early adolescents (AMLE, 2010).

Summary

This chapter began with an exploration of the historical influences that led to the identification of adolescence as a unique developmental stage in human growth. Further, it expanded on theories designed to explain the variable and erratic biological, physical, and social changes associated with puberty and entrance into adolescence. Finally, it sought to suggest that structuring environments responsive to the needs of adolescents may lessen some of the angst associated with the stage. The second section focused specifically on schools environments and how for the past 100 years education has

structured learning environments to support both academic and developmental needs for early adolescents. This study seeks to explore the relationship between learning environments for early adolescents and academic and non-academic outcomes.

Chapter 3 Methodology

Introduction

As discussed in Chapter 2, there is a plethora of literature available regarding early adolescent development and efforts of civil and educational leaders to structure learning environments to support meeting both their developmental and educational needs. Since the emergence of the junior high movement, early in the twentieth century, educational history has documented various school structuring initiatives implemented to more effectively support students' academic success. While research results are limited, confounding and inconclusive, school districts continue to reorganize schools in attempts to best support positive student outcomes. The purpose of this two-group descriptive efficacy study was to explore the relationship between school configuration and academic and non-academic outcomes of sixth grade students attending school in two different configurations in a large, urban, Midwestern public school district, to add to available literature, and assist educational leaders in making decisions regarding educational environments supportive to the outcomes of early adolescent students.

This chapter will present the methodology used to address the research questions presented in Chapter 1. Included in this chapter are sections that address the participants, procedures, research design, instrumentation, collection procedures, and data analysis.

Participants

Individuals participating in this study were enrolled in a sixth grade in a prekindergarten or kindergarten through sixth grade school configuration (Group 1) or a middle school configuration (Group 2) in a Midwestern, urban school district during the 2015-2016 school year.

Number of participants

Study participants ($N = 1430$) consist of two cohorts of naturally formed student groups. Group 1 includes a naturally formed group of students attending sixth grade in an elementary school configuration ($n = 619$). Group 2 includes a naturally formed group of students attending sixth grade in a middle school configuration ($n = 811$). Participants were enrolled in the sixth grade during the 2015-2016 school year.

Inclusion criteria of participants

Participants selected for this study completed both fifth and sixth grade in the study school district and completed the NeSA-R, NeSA-M, and Student Engagement and Climate Survey in the sixth grade. Students must have had consecutive enrollment in their school for the 2015-16 school year.

Description of Procedures

The research was conducted in the elementary and middle school settings. The study procedures did not interfere in any way with the normal educational practices and did not involve coercion or discomfort of any kind. Data was stored on secure databases and served for statistical analysis in the office of the primary researcher and the dissertation chair. No individual identifiers were attached to the data.

Research Design

This study is a two-group descriptive (ex-post facto) comparative study designed to explore the relationship between school configuration and academic and non-academic outcomes of sixth grade students attending school in an elementary configuration compared to academic and non-academic outcomes of sixth grade students attending school in a middle school configuration. Academic outcomes included achievement

scores of sixth grade students as measured by the NeSA-Reading and NeSA-Mathematics assessments. Non-academic outcomes of attendance, suspension and engagement, and climate responses to the research school district's Student Engagement and Climate Survey were compared for sixth grade students in the two school configurations.

Independent Variable Descriptions

The independent variable is the school configuration. Group 1 includes sixth grade students who attended school in an elementary school environment. Group 2 includes sixth grade students who attend school in a middle school environment.

Dependent Variables

There were six dependent variables for this study that fell into two specific themes: academic and non-academic outcomes.

Academic outcome measures and instrumentation. The two academic measures included sixth grade NeSA-R scaled scores, and sixth grade NeSA-M scaled scores.

Non-Academic outcome measures and instrumentation. The four non-academic measures include attendance and behavior measures and Student Engagement and Climate Survey responses. Attendance measures include absence frequency reported as a ratio level variable that referred to the number of days a student was absent from school. Behavior measures include suspension frequency reported as a ratio level variable that referred to the number of days a student was suspended out of school. The Student Engagement and Climate Survey contains items specific to students' perception of personal engagement in the school environment as well as perceptions of

the overall school climate. For this study, engagement and climate responses were analyzed separately to assess the two different constructs. Student Engagement and Climate Survey responses are reported on a five-point Likert scale.

Research Questions, Sub-Questions, and Data Analysis

Research Question #1: Is there a significant difference in the academic outcomes for students attending sixth grade in an elementary school configuration compared to students attending sixth grade in a middle school configuration?

Sub-Question 1a: Is there a significant difference in the mean scale scores of the NeSA-Reading assessment of students attending sixth grade in an elementary school configuration compared to the mean scaled score of the NeSA-Reading assessment of students attending sixth grade in a middle school configuration?

Analysis. Research Question #1a will be analyzed using an independent t test to examine the significance of the difference between the mean scaled scores of the NeSA-Reading assessment for students attending sixth grade in an elementary school configuration compared to the mean scaled scores of the NeSA-Reading assessment for students attending sixth grade in a middle school configuration. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type 1 errors. Means and standard deviations will be displayed on tables.

Sub-question 1b: Is there a significant difference in the mean scale scores of the NeSA-Math assessment of students attending sixth grade in an elementary school configuration compared to the mean scaled score of the NeSA-Math assessment of students attending sixth grade in a middle school configuration?

Analysis. Research Question #1b will be analyzed using an independent t test to examine the significance of the difference between the mean scaled scores of the NeSA-Math assessment for students attending sixth grade in an elementary school configuration compared to the mean scaled scores of the NeSA-Math assessment for students attending sixth grade in a middle school configuration. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type 1 errors. Means and standard deviations will be displayed on tables.

Research Question #2: Is there a significant difference in the non-academic outcomes for students attending sixth grade in an elementary school configuration compared to students attending sixth grade in a middle school configuration?

Sub-question 2a: Is there a significant difference in the number of days absent from school for students attending sixth grade in an elementary school configuration compared to the number of days absent from school for students attending sixth grade in a middle school configuration?

Analysis. Research Question #2a will be analyzed using a Mann Whitney U to examine the significance of the difference between the number of days absent from school for students attending sixth grade in an elementary school configuration compared to the number of days absent from school for students attending sixth grade in a middle school configuration. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type 1 errors. Means and standard deviations will be displayed on tables.

Sub-question 2b: Is there a significant difference in the number of days suspended out of school for students attending sixth grade in an elementary school

configuration compared to the number of days suspended out of school for students attending sixth grade in a middle school configuration?

Analysis. Research Question #2b will be analyzed using a Mann Whitney U to examine the significance of the difference between the number of days suspended out of school for students attending sixth grade in an elementary school configuration compared to the number of days suspended out of school for students attending sixth grade in a middle school configuration. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type 1 errors. Means and standard deviations will be displayed on tables.

Sub-question 2c: Is there a significant difference in the engagement response items of students on the Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the engagement response items of students on the Engagement and Climate Survey for students attending sixth grade in a middle school configuration?

Analysis. Research Question #2c will be analyzed using a Mann Whitney U to examine the significance of the difference between the engagement response items of students on the Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the difference between engagement response items of students on the Engagement and Climate Survey for students attending sixth grade in a middle school configuration. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type 1 errors. Means and standard deviations will be displayed on tables.

Sub-question 2d: Is there a significant difference in the climate response items of students on the Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the climate response items of students on the Engagement and Climate Survey for students attending sixth grade in a middle school configuration?

Analysis. Research Question #2d will be analyzed using a Mann Whitney U to examine the significance of the difference between the climate response items of students on the Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the difference between climate response items of students on the Engagement and Climate Survey for students attending sixth grade in a middle school configuration. Because multiple statistical tests will be conducted, a two-tailed .05 alpha level will be employed to help control for Type 1 errors. Means and standard deviations will be displayed on tables.

Data Collection Procedures

All student academic and non-academic data was retrospectively, archival, and routinely collected school information by district employees with ethical access to student records. Students enrolled in the research school district take the NeSA assessments and complete the Student Engagement and Climate Survey in the spring of the school year. Permission from the appropriate school research personnel was obtained, as well as approval from the University of Nebraska Medical Center/University of Nebraska at Omaha Joint Institutional Review Board (IRB) for the Protection of Human Subjects. Non-coded numbers were used to display individual de-identified

student data. Aggregated group data, descriptive statistics, and inferential statistical analysis was utilized and reported with means and standard deviations on tables.

Performance Sites

The research will be conducted in the public school setting under normal educational practices. The study procedure will not interfere in any way with the normal educational practices in the public school setting and will not involve coercion or discomfort of any kind. Data will be stored on spreadsheets and computer flash drives for statistical analysis in the office of the primary researcher and the dissertation chair. Data and computer drives will be secured. No individual identifiers will be attached to the data.

Confidentiality

Non-coded numbers was used to display individual achievement. Individual data was de-identified by the appropriate university personnel after all information is linked and the data sets are complete.

Human Subjects Approval Category

The exemption category for this study was provided under 45CFR.101(b) category 3. The research was conducted using routinely collected archival data. A letter of support from the district was provided to the University of Nebraska Medical Center/University of Nebraska at Omaha Joint Institutional Review Board for the Protection of Human Subjects.

Chapter 4 Results

Purpose of Study

The purpose of this two-group descriptive efficacy study was to explore the relationship between school configuration and academic and non-academic outcomes of sixth grade students attending school in an elementary configuration compared to academic and non-academic outcomes of sixth grade students attending school in a middle school configuration. Academic outcomes include achievement scores of sixth grade students as measured by the NeSA-Reading and NeSA-Mathematics assessments. Non-academic outcomes of attendance, suspension, and Student Engagement and Climate Survey responses of sixth grade students in an elementary school configuration were also compared with the same non-academic outcomes of sixth grade students in a middle school configuration.

All dependent variable study data was retrospective, archival, and routinely collected school information. Permission from the appropriate school district research personnel was received before academic and non-academic data were collected and analyzed. A randomly formed sample population of 1430 sixth grade students attending school in either an elementary or middle school configuration was obtained to include both academic and non-academic data. Group 1 consisted of 611 research district students attending sixth grade in an elementary environment. Group 2 consisted of 819 research district students attending sixth grade in a middle school configuration. All study participants attended the research school district for both the 2014-2015 and 2015-2016 school years. Academic and non-academic data was collected from the 2015-2016 school year. Non-coded numbers were used to display individual de-identified academic

data. Aggregated group data, descriptive statistics, and inferential statistical analysis were utilized and reported with means, standard deviations, mean ranks, and sum of ranks on tables.

There were six dependent variables for this study that fell into two specific themes: academic (reading and mathematics achievement) and non-academic (number of days of out-of-school suspension, number of days absence from school, engagement and climate responses to the Student Engagement and Climate Survey). Academic achievement was defined by scaled scores on the NeSA-Reading and NeSA-Math assessments. Absence frequency was a ratio level variable that referred to the number of days a student was absent from school. Suspension data was also reported as a ratio level variable that indicates the number of out-of-school suspension days a student received during the 2015-2016 school year.

Research Question #1

Is there a significant difference in the academic outcomes for students attending sixth grade in an elementary school configuration compared to students attending sixth grade in a middle school configuration?

Research Sub-Question 1a. Is there a significant difference in the mean scaled score of the NeSA-Reading assessment of students attending sixth grade in an elementary school configuration (Group 1) compared to the mean scaled score of the NeSA-Reading assessment of students attending sixth grade in a middle school configuration (Group 2)?

NeSA-Reading. A two-tailed t test analysis was run to determine significance of the data. There was a significant difference ($t = 2.21, p = .028, df = 1428$) in the mean scaled scores of NeSA-Reading assessment. The sixth grade students (Group 1)

attending school in an elementary configuration ($M=116.84$, $SD= 38.77$) scored significantly lower than sixth grade students (Group 2) attending sixth grade in a middle configuration ($M=121.82$, $SD=44.83$). Table 3 displays the means and standard deviations of the NeSA Reading composite scale scores.

Table 3

Descriptive Statistics for NeSA Reading Scaled Scores

	<i>M</i>	<i>SD</i>
Group 1 (<i>n</i> = 619)	116.84	38.77
Group 2 (<i>n</i> = 811)	121.82	44.83

Research Sub-question 1b. Is there a significant difference in the mean scaled score of the NeSA-Math assessment of students attending sixth grade in an elementary school configuration (Group 1) compared to the mean scaled score of the NeSA-Math assessment of students attending sixth grade in a middle school configuration (Group 2)?

NeSA-Math. A two-tailed t test analysis was run to determine significance of the data. There was a significant difference ($t = 4.64, p = 0.00, df = 1428$) in the mean scaled scores of NeSA-Math assessment. The sixth grade students (Group 1) attending school in an elementary configuration ($M=100.21, SD= 33.68$) scored significantly lower than sixth grade students (Group 2) attending sixth grade in a middle configuration ($M=110.19, SD=44.67$). Table 4 displays the means and standard deviations of the NeSA-Math composite scaled scores.

Table 4

Descriptive Statistics for NeSA Math Scaled Scores

	<i>M</i>	<i>SD</i>
Group 1 (<i>n</i> = 619)	100.21	33.68
Group 2 (<i>n</i> = 811)	110.19	44.67

Research Question #2: Is there a significant difference in the non-academic outcomes for students attending sixth grade in an elementary school configuration compared to students attending sixth grade in a middle school configuration?

Research Sub-question 2a: Is there a significant difference in the number of days absent from school for students attending sixth grade in an elementary school configuration compared to the number of days absent from school for students attending sixth grade in a middle school configuration?

Attendance. A Mann-Whitney U test was run to determine significance of the data. There was no significant difference ($U = 238254, p = .099$) in the number of days absent from school for sixth grade students (Group 1) attending school in an elementary school configuration than for sixth grade students (Group 2) attending school in a middle school configuration. Table 5 displays the mean ranks and sum of ranks for days of absence.

Table 5

Descriptive Statistics for Days Absence

	Mean Rank	Sum of Ranks
Group 1 ($n = 619$)	694.90	430144.00
Group 2 ($n = 811$)	731.22	593021.00

Research Sub-question 2b: Is there a significant difference in the number of days suspended out of school for students attending sixth grade in an elementary school configuration compared to the number of days suspended out of school for students attending sixth grade in a middle school configuration?

Suspension. A Mann-Whitney U test was run to determine significance of the data. There was no significant difference ($U = 250336.5$, $p = .852$) in the number of days suspended out of school for sixth grade students (Group 1) attending school in an elementary school configuration than for sixth grade students (Group 2) attending school in a middle school configuration Table 6 displays the mean ranks and sum of ranks for days suspended out of school.

Table 6

Descriptive Statistics for Days Suspended out of School

	Mean Rank	Sum of Ranks
Group 1 ($n = 619$)	714.42	442226.50
Group 2 ($n = 811$)	716.32	580938.50

Research Sub-question 2c: Is there a significant difference in the engagement response items of the Student Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the engagement response items of the Student Engagement and Climate Survey for students attending sixth grade in a middle school configuration?

Engagement. A Mann-Whitney U test was run to determine significance of the data. There was no significant difference ($U = 244545$, $p = .404$) in the engagement response items of the Student Engagement and Climate Survey for sixth grade students (Group 1) attending school in an elementary school configuration than for sixth grade students (Group 2) attending school in a middle school configuration. Table 7 displays the mean ranks and sum of ranks for engagement response items of the Student Engagement and Climate Survey.

Table 7

Descriptive Statistics for Student Engagement Survey Response

	Mean Rank	Sum of Ranks
Group 1 ($n = 619$)	725.94	449354.00
Group 2 ($n = 811$)	707.54	573811.00

Research Sub-question 2d: Is there a significant difference in the climate response items of the Student Engagement and Climate Survey for students attending sixth grade in an elementary school configuration compared to the climate response items of the Student Engagement and Climate Survey for students attending sixth grade in a middle school configuration?

Climate. A Mann-Whitney U test was run to determine significance of the data. There was a significant difference ($U = 226861.5$, $p = .002$) in the climate response items of the Student Engagement and Climate Survey for sixth grade students (Group 1) attending school in an elementary school configuration than for sixth grade students (Group 2) attending school in a middle school configuration. Table 8 displays the mean ranks and sum of ranks for climate response items of the Student Engagement and Climate Survey.

Table 8

Descriptive Statistics for Student Climate Survey Response

	Mean Rank	Sum of Ranks
Group 1 ($n = 619$)	754.50	467037.50
Group 2 ($n = 811$)	685.73	556127.50

Chapter 5 Implications

If there is a consensus in the research literature, it is that early adolescence is a time of great variability and change in the life of a young person (Juvonen et al., 2004). Not only is the individual experiencing personal change, but so too is the world around them; their friends, their relationships, their activities, their interests and in many cases, their school environment. As students navigate the change associated in middle grades, they also experience change in academic and non-academic outcomes. For some, the impact may be associated with a decline in academic achievement (Bedard & Do, 2005; Offenburg, 2001; West & Schwerdt, 2012), an increase in absenteeism and disruptive behavior (Cook et al., 2008; Rockoff & Lockwood, 2010), or an overall decrease in motivation and engagement (Blythe et al., 1983; Eccles et al., 1993).

The purpose of this two-group descriptive efficacy study was to explore the relationship between school configuration and academic and non-academic outcomes of sixth grade students attending school in two different configurations. The elementary cohort included students attending sixth grade in a pre-kindergarten or kindergarten through sixth grade elementary configuration. The middle school cohort included students attending sixth grade in a fifth or sixth grade through eighth grade middle school configuration. All study participants were in the sixth grade for the 2015-16 school year. For this study, academic outcomes were defined as the mean scale scores for the Nebraska State Assessments (NeSA) in Reading and Math; non-academic outcomes were defined as attendance (number of days absence from school not due to suspension), suspension (number of days suspended out of school), and students responses to the research school district's Student Engagement and Climate Survey. Results were drawn

from analysis of academic and not academic outcomes. Study conclusions are presented for each of the outcome areas.

The theoretical framework for this study was Eccles & Midgley's (1989) Stage-environment fit model that suggests that the greater the fit between a student's developmental stage and the school environment the more likely a positive relationship to student outcomes. Although all stages of development are important, this study focused on sixth grade because some researchers have identified sixth grade as a key transitional grade between elementary and middle school, and therefore may significantly impact a student's later academic progress (Carnegie Council on Adolescent Development, 1989; Roeser et al., 2000; Cook et al., 2008; Eccles et al., 1991). Current research on the impact of such changes on students' outcomes is mixed. Most studies reviewed identified more favorable outcomes for students enrolled in elementary school configurations (Abella, 2005; Offenberg, 2001; Bedard & Do; 2005; Cook et al., 2008; Rockoff & Lockwood, 2010). Other studies have identified an inconsistent advantage such as school size, socioeconomic status, programing, and amount of time in a school level for students enrolled in K-6 schools (Byrnes & Ruby, 2007; Weiss & Kipnes, 2006).

The research questions guiding this study were:

1. Is there a significant difference in the academic outcomes for students attending sixth grade in an elementary school configuration compared to students attending sixth grade in a middle school configuration?

2. Is there a significant difference in the non-academic outcomes for students attending sixth grade in an elementary school configuration compared to students attending sixth grade in a middle school configuration?

Conclusions

Question 1. Sixth grade student mean scale score data on NeSA Reading and Math assessments were compared to determine if there was a difference by school configuration. Academic outcomes were analyzed using a *t* test for significance. The standard significance level was $p < .05$. The tests revealed significant performance differences.

Reading. All 1430 study participants took the NeSA Reading Assessment in the sixth grade of the 2015-16 school year. There was a significant difference ($t = 2.21, p = .028$) between mean scaled scores. The sixth grade students attending sixth grade in an elementary school configuration ($M = 116.84, SD = 38.77$) scored significantly lower than sixth grade students attending sixth grade in a middle school configuration ($M = 121.82, SD = 44.83$).

Math. All 1430 study participants took the NeSA Math Assessment in the sixth grade of the 2015-16 school year. There was a significant difference ($t = 4.64, p = .000$) between mean scaled scores. The sixth grade students attending sixth grade in an elementary school configuration ($M = 100.21, SD = 33.68$) scored significantly lower than sixth grade students attending sixth grade in a middle school configuration ($M = 110.19, SD = 44.67$).

For academic outcomes, the findings indicate that sixth grade students attending school in an elementary school configuration scored significantly lower than sixth grade

students in a middle school configuration. Given the research literature reviewed for this study, the study result was not predicted. Rockoff and Lockwood (2010) studied student outcomes for students attending elementary and middle school configurations in New York State. They found a significant decrease in both reading and math scores for students who transitioned to middle school in sixth grade compared to students who remained in an elementary environment for sixth grade (Rockoff & Lockwood, 2010). Offenber (2001) conducted a similar study, but in the city of Philadelphia and drew similar conclusions.

Wren (2003) studied the effects of student transition on student achievement in a large, urban Midwest school district. The researcher studied achievement scores from the Michigan Education Assessment Program (MEAP) from 232 schools. The researcher found that transitioning from one school level to another was negatively associated with student achievement, and that elementary student achievement was highest, regardless of grade configuration (Wren, 2003).

One possible explanation for the difference in study results may be related in the level of data measured. Data in this study used student level data from one school district. Offenber analyzed school level data obtained from multiple school districts across the city of Philadelphia. Rockoff and Lockwood examined state reported data from the New York State Department of Education data management system. Like Rockoff and Lockwood, Wren also analyzed state-wide achievement data. Carolan, Weiss and Matthews (2015) identify confounding results in the study of school configuration to be a likely effect of differences between schools, districts, and states.

Question 2. Sixth grade student data for attendance, suspension days, and student responses to the research school districts Student Engagement and Climate Survey were compared to determine if there was a difference by school configuration. It is important to note, the Student Engagement and Climate Survey contains items specific to students' perception of personal engagement in the school environment as well as perceptions of the overall school climate. For this study, engagement and climate responses were analyzed separately to assess the two different constructs. All non-academic outcomes were analyzed using a nonparametric Mann-Whitney U test for significance. Days absent from school, days suspended and student responses to the Likert scale Student Engagement and Climate Survey were converted to ranks by non-academic variable. The ranks were ordered and analyzed for difference between the two school configurations. The standard significance level was set at $p < .05$. The tests revealed mixed results.

Attendance. Attendance data was collected for all study participants for the 2015-16 school year. Attendance data included all days students were reported as absent from school that were not reported as days of suspension. The number of days absent were ranked ordered and a Mann-Whitney U test was used to compare the ranks for the sixth graders in an elementary configuration ($n = 619$) and the sixth graders in a middle school configuration ($n = 811$). The results indicate no significant difference ($U = 238254.00, p = .099$) in the number of days absent for sixth grade students attending sixth grade in an elementary school configuration compared to sixth grade students attending sixth grade in a middle school configuration.

Suspension. Suspension data was collected for all study participants for the 2015-16 school year. Suspension data included all days or partial days students were

reported as suspended from school. The number of days suspended were ranked ordered and a Mann-Whitney U test was used to compare the ranks for the sixth graders in an elementary configuration ($n = 619$) and the sixth graders in a middle school configuration ($n = 811$). The results indicate no significant difference ($U = 250336.50, p = .85$) in the number of days suspended for sixth grade students attending sixth grade in an elementary school configuration compared to sixth grade students attending sixth grade in a middle school configuration,

Engagement. All study participants took the district's Student Engagement and Climate Survey in the sixth grade of the 2015-16 school year. Engagement scores were totaled, ranked ordered, and a Mann-Whitney U test was used to compare the ranks for the sixth graders in an elementary configuration ($n = 619$) and the sixth graders in a middle school configuration ($n = 811$). The results indicate no significant difference ($U = 244545.00, p = .40$) in the engagement response items for sixth grade students attending sixth grade in an elementary school configuration compared to sixth grade students attending sixth grade in a middle school configuration.

Climate. All study participants took the district's Student Engagement and Climate Survey in the sixth grade of the 2015-16 school year. Climate scores were totaled, ranked ordered, and a Mann-Whitney U test was used to compare the ranks for the sixth graders in an elementary configuration ($n = 619$) and the sixth graders in a middle school configuration ($n = 811$). The results indicate there was a significant difference ($U = 226861.50, p = .002$) in the climate response items for sixth grade students attending sixth grade in an elementary school configuration compared to sixth grade students attending sixth grade in a middle school configuration.

For non-academic outcomes, this study found mixed results. While findings for attendance and suspension data indicate that there is not a statistically significant difference in the attendance and suspension indicators for sixth grade students in the two school configurations, there does exist evidence of a practical difference in the attendance result. For this study the researcher applied the social science level of significance standard of $p < .05$. This level of significance indicates that there is less than 5% likelihood in committing a Type I error (concluding there is an effect, when there is none). The attendance $p = .099$, while it is not considered statistically significant, does indicate a practical significance and thus the result should not be completely disregarded.

The result for suspension data also did not indicate a significant difference between school configurations; however, there were some notable findings. Of the 1430 students included in this study, only 111 (roughly 8% of the total population) included any days or partial days suspended out of school. Drilling down further, of the 111 students suspended out of school, forty-seven attended sixth grade in an elementary configuration and sixty-four attended sixth grade in a middle school configuration. For the total number of students ($n=1319$) who had no suspension from school, 572 were attending sixth grade in an elementary school configuration 747 were attending sixth grade in a middle school configuration. The noteworthy result in this instance is that 92% of the students in each cohort, regardless of configuration, had no suspension from school. Also interesting to note, 90 of the 111 students reporting suspension data had five or fewer total days of suspension from school, with little more than half of the students attending school in a middle school configuration. This observation seems to

support the overall conclusion that there is not a significant difference in suspension data between school configurations.

The result for the Student Engagement and Climate Survey indicates that there is not a significant difference in student responses to the engagement items of the survey. However, the climate responses do indicate a statistically significant difference between the two configurations. Students attending sixth grade in a middle school configuration scored significantly higher than sixth grade students in an elementary configuration. The results indicate that students in the middle school environment responded more favorably on survey items regarding school climate.

While results are mixed, the findings are interesting and not what the researcher anticipated given the research literature reviewed for this study. The theoretical framework presented in Chapter 1 implies a direct relationship between the student developmental stage and the school environment. Eccles and her colleagues (1991) have suggested that the changing nature of the educational environments experienced by many early adolescents is a plausible explanation for declines in outcomes associated when students transition from one school level to the next. Some researchers suggest that transitions, rather than grade span may be the primary concern for middle grade students (Alspaugh, 1998; Eccles et al., 1991; Combs, Clark, Moore, Owuegbuzie, Edmonson, & Slate, 2011). Students who leave one school setting and transition into another may struggle in adjusting to changes, including a new building, new teachers, new friends and new classes (Combs et al., 2011).

Because of the emphasis on specialization of instruction, teaming and moving from one class to another, middle school environments may have become associated with

fostering less personal relationships with teachers and other significant adults in the school (Eccles et al., 1993). These perceptions may be made worse by an environment that employs more rigorous grading and administrative attention to control and discipline (West & Schwerdt, 2012). Rockoff and Lockwood (2010) also identify characteristics of a larger school and class size, created by combining multiple students from multiple elementary schools in one middle school, as creating more diverse environments that students may have difficulty adjusting to as they transition from the elementary environment.

Cook et al. (2008) found that sixth grade students enrolled in middle schools were twice as likely to be cited for behavior infractions as sixth grade students in elementary schools. Rockoff and Lockwood (2010) indicated an attendance rate decline for students attending middle school compared to students attending school in an elementary configuration. Abella (2005) conducted a longitudinal study in Miami-Dade where schools were in process of transitioning from a middle school model to a K-8 design. Students in the elementary configuration received fewer out-of-school suspensions in the middle grades, with the highest difference between configurations for students in the sixth grade (Abella, 2005).

Discussion

While this study did not corroborate findings of recent studies (Rockoff & Lockwood, 2010; Cook et al., 2008; Byrnes & Ruby, 2007; Offenber, 2001; West & Schwerdt, 2012) regarding school configuration and student outcomes, it did indicate that meaningful, and in some cases statistically significant differences do exist. The study results are validated by three elements of its design. First, the population is confined to a

single large, urban public school district in the Midwest, reducing the confounding effect of different policies and practices associated with other school district and state governances. Second, this study analyzed student level data rather than school level data. Utilizing student data strengthens conclusions regarding outcomes for students across configurations rather than confounding results by specific school characteristics. Third, this study compares outcomes for only sixth grade students, mitigating the effect of multiple academic and non-academic standards across middle grades.

School configuration is an important element in school structure, but it does not account for all variables. School organization is within the decision-making purview of school and district leaders. Thus, this study can help guide educational leaders and policy-makers, particularly in the research school district, toward decisions that may support positive impacts on student outcomes. This study indicates that grade configuration may have a significant relationship to student outcomes; further discussion includes implications for school and district leadership consideration.

Academic Outcomes. This study concludes a significant finding for academic outcomes, with higher achievement associated with a middle school configuration, therefore it will be important for district leaders to further explore practices associate with sixth grade instruction. Specifically, district leaders need to consider instructional practices. Are their differences associated with strategies, routines, and procedures across school configurations? Are there teacher characteristics that may have influenced a more positive effect in middle schools, such as teacher preparation and certification? Typically, in an elementary environment, students are assigned to one teacher who provides all core subject instruction. Middle schools have been more closely aligned to

departmentalization, where teachers are more specialized and provide instruction in one curricular area. Finally, consideration must be given to other organizational variables such as block scheduling, teaming, advisement, guided study hall, counselors, etc. Each of these variables has been associated with the middle school concept and is beyond the scope of the current study.

Non-academic Outcomes. This study revealed mixed results regarding non-academic outcomes. There were no significant differences between suspension and engagement variables. Attendance variables, while not statistically significant, did infer a practical significance between the two configurations. The climate variable results indicated a significant difference between the two configurations. Most research reviewed for this study treated attendance and suspension as behavior measures (Rockoff & Lockwood, 2010; Cook et al., 2008; Weiss & Kipnes, 2006; Alspaugh, 1998); none of the studies reviewed included student level climate or engagement data. In this study, engagement data includes student perceptions of their personal investment in their learning. Climate data indicate a student's perception of the school learning environment. Non-academic outcomes are important for school leaders to consider as they structure learning environments supportive to the developmental needs of students.

As district leaders consider attendance practices in schools, this study encourages administrators to consider factors related to absenteeism. While this study indicated a practical significant difference in attendance, with middle school sixth graders having an increased number of days absence, it cannot be concluded that the difference is related to school configuration. It is important for school leaders to explore other variables that impact school attendance. For example, as early adolescents develop, they demonstrate

an increased need for autonomy, independence, and decision-making. While not specifically measured in this study, development may impact a student's decision to go to school. Additionally, there are family variables that also impact school attendance, such as proximity to school, transportation needs, and child care.

The research literature indicated increased suspension rates for students attending school in a middle school configuration compared to students attending school in an elementary configuration (Rockoff & Lockwood, 2010; Cook et al., 2008; Offenber, 2001). This study did not substantiate that finding. There was not a significant difference in suspension data between configurations. However, it is important for school leaders to consider how environments for early adolescents are structured and the influence on student behavior. Ellerbrock and Kiefer (2013) studied school configuration to gain a deeper understanding of the interplay between adolescent developmental needs, school structures, and student discipline. They noted a higher incident of behavior infractions in the "unstructured aspects of the school day" (p. 172).

In an elementary environment, students' days are very structured. Students are typically assigned to one classroom for most of the school day. Instruction is provided by one teacher, who may be assisted by an aide or paraprofessional. While there may be general guidelines for instruction periods, much of the control for transition from one core subject to another is under the discretion of the classroom teacher (Lounsbury & Johnston, 1988; Cook et al., 2008). Additionally, as students transition to out-of-class activities such as physical education, art, music, etc., they are escorted through the building by an adult supervisor. Even during non-instructional transition students are escorted as a group during restroom breaks, transition to and from the cafeteria, as well as

to the library and play ground. For most of the day, students are under direct adult supervision.

In a middle school environment, the daily structure is different. Instructional periods are subject to a daily schedule with specific blocks of time allocated for instruction and transition between periods. Depending on the adopted schedule, students can transition as many as ten times in a single school day. While many middle schools have adopted a block schedule, with instructional periods lasting around 90 minutes, students still transition at least six times in the day, including advisement and lunch periods. Ellerbrock and Kiefer (2013) defined the unstructured portion of a middle school day to include the time before school, lunch, between class transitions, and the end of the school day. While they found implementation of developmentally responsive practices evident in the structured portion of the middle school day, they noted less deliberate practice in the unstructured portion of the day. They also noted a significant increase in negative student interaction such as bullying, harassment, and fights (Ellerbrock & Kiefer, 2013). While research on aspects of the school day are relatively understudied, this study does encourage school leaders to consider practices associated with student behavior during unstructured time in the school day.

While there is no statistical difference in this study regarding student reported engagement, it is important for district leaders to consider practices to increase engagement in the school. As was noted in the literature review, early adolescence is characterized by growth in physical, cognitive, social, and emotional development. Middle grade advocates recommend implementing developmentally responsive practices such as teaming, advisement, exploratory curriculum, and school counseling programs to

support student engagement in school (George & Alexander, 2003; AMLE, 2010; Yecke, 2006; McEwin & Green, 2010). These practices in addition to co-curricular activities such as sports and student clubs have been reported to positively influence student engagement (AMLE, 2010).

Criticism for the middle school configuration has frequently been associated with a climate negatively influenced by large buildings with large numbers of students and multiple transitions throughout the school day (Yecke, 2006). According to Cook et al. (2008) middle schools place greater emphasis on discipline and academic achievement, with less opportunities for supportive relationships with specific teachers. While many studies associate middle schools with creating a less positive climate than that of elementary schools (Rockoff & Lockwood, 2010; Cook et al., 2008; Yecke, 2006; Offenber, 2001), results on academic outcomes have been mixed (Byrnes & Ruby, 2007; Weiss & Kipnes, 2006). This study found that sixth grade students reported significantly higher climate ratings for middle school configurations compared to sixth grade students in an elementary school configuration.

The mixed result for non-academic outcomes should not indicate to school and district leaders that one variable demands more attention than another. What this study does offer educational leaders is implications that school environments do have a relationship to both academic and non-academic outcomes. Rather than focus attention on school configuration, it may be more appropriate to consider practices designed to meet the needs of early adolescents in both school environments. As educational leaders strive to create a fit between the developmental stage of early adolescents and school

environments, it is important to consider how early adolescents are supported in their current environment as well as prepared for transition to the next.

A general consensus in the literature for this study suggests that school transitions typically result in adverse student outcomes (Alspaugh, 1998; Blythe et al., 1978; Eccles, et al., 1993; Carolan, 2013). Blyth et al. (1983) posit that transition between configurations compounds whatever developmental changes a student is experiencing. Gaps in educational outcomes result from the fact that early adolescents making the transition to a new classroom, grade, or school must simultaneously cope with developmental change and school change at the same time. Because these early adolescents are coping with multiple challenges, these students are more likely to experience negative outcomes (Eccles et al., 1991). As school districts continue to organize schools in a variety of configurations, even within a single district, it will be important for leaders to consider strategies to assist students with transitions.

With increasing family mobility, especially in public education, Cullen and Robles-Pina (2009) encouraged districts to develop transition programming for all students, not just students transitioning from one school level to another. Specifically, they discuss the challenges associated with physical, structural, and contextual change and the negative associations with student outcomes each time a student transitions. In many cases students need to adjust quickly to larger numbers of students, learn new rules and routines, and adjust to different grading and discipline practices following each transition (Cullen & Robles-Pina, 2009; Perkins & Gelfer, 1995). Their recommendation moves beyond school configuration and reflects what research suggests is best for early adolescents (AMLE, 2010).

Generalizability

This study provided descriptive and inferential data regarding the relationship between school configuration and student outcomes for sixth grade students in an urban, Midwestern public school district. It is not appropriate to generalize findings to other school districts. Although this study may have provided evidence about the relationship between school configuration and student outcomes, the lack of more comprehensive data for both schools and students may also limit the generalizability of the findings.

Variables not considered in this study include gender, socioeconomic status, ethnicity, language learner level, special education inclusion, and family background. Limitations at the school level include scheduling, instructional practices, teacher experience and preparation, as well as class and school size. Further investigation is needed to determine what factors may have more impact on student outcomes and whether these variables can be controlled.

Finally, I made certain methodological decisions when developing the analytical models that may have resulted in a narrower range of findings. For example, students who did not have available data for all study variables were excluded from the study. School data, student demographics and variables that were excluded may have provided critical contextual information that may have helped to explain study results. This study still had the potential to identify the relationship between factors which school leaders can control to enhance student outcomes.

Recommendation for Further Research

While this research indicated a limited relationship between school configuration and student outcomes, more research is needed to examine variables within and between schools to conclusively and definitively answer the grade configuration debate. Because this study utilized student-level data, opportunities exist for longitudinal studies to track progress over time. Doing so may address other issues highlighted by other researchers. For example, Abella (2005) found that students delaying the transition to middle school had higher academic achievement scores when compared to peers who transitioned in earlier grades. Alsplough (1998) drew a similar conclusion. Both researchers attributed the loss in achievement scores not to school configurations, but to the timing of school transitions. Tracking students on into high school may help to substantiate these findings.

Although research indicates socioeconomic status may have the greatest impact on student outcomes (Cook, et al., 2008; Weiss & Kipnes, 2006; Juvonen et al., 2004; Byrnes & Ruby, 2007; Offenber, 2001), this research did not include it as a study variable. Further research in this area could be expanded to include other external factors such as ethnicity, family demographics, and student gender.

Also, as noted earlier, a limitation of this study is that it does not include any data on teaching and learning practices in schools. The Student Engagement and Climate Survey results indicated a significant difference in student climate responses. While the climate survey provides a narrow view on some basic school characteristics, further study of instructional strategies, teacher preparation, and transitional practices to ease the move from elementary to middle school might provide a better understanding of the ways in

which schools create supportive student environments beyond the impact of grade configuration.

Finally, grade configuration has important implications for instruction at the school level. The certification of teachers within each configuration, the ability to recruit and retain teachers who understand and have a desire to teach early adolescents, and the organization of teachers within the schools may all have an impact on the outcomes for students. Further research is merited.

Summary

The results of this study indicate that school configuration may have an effect on student academic and non-academic outcomes, although it is not a one-size-fits-all solution. School structure is complex, needs of learners is one piece of the decision to reorganize schools. Whole-scale shifts from one configuration to another can be challenging and expensive. In addition to student outcomes, there are considerations for building capacity, transportation, programming, staffing and community support. It may be that districts will continue to offer a variety of school configurations. This study encourages policy makers to consider student outcomes as they configure schools for early adolescent students.

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