A Correlational Study Exploring the Possible Link Between Instructional Program
Coherence and Student Achievement in North Carolina Middle Schools

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ABSTRACT

Dustin Johnson: A Correlational Study Exploring the Possible Link Between
Instructional Program Coherence and Student Achievement in North Carolina Middle
Schools
(Under the direction of Dr. Fenwick English)

This quantitative study was designed to determine whether randomly selected

North Carolina middle schools categorized as meeting expected or high growth standards

on student achievement measures exhibited statistically significant differences on

indicators of instructional coherence compared to schools not so designated. The

researcher hypothesized that a statistically significant positive correlation would exist

between program coherence and student achievement at the middle school level.

Respondents completed web-based surveys designed to measure teacher and

principal perceptions of instructional program coherence in each middle school. The

indicators used to determine the extent, or level, of coherence within the schools were

taken from a prior study in Chicago that discovered a positive relationship between

program coherence and student achievement at the elementary level.

The researcher used *SPSS Version 15* Pearson bivariate correlation reports, along

with data taken from *Qualtrics*, to analyze findings from the study. The results did not

indicate a statistically significant positive correlation between program coherence and

student achievement in randomly selected North Carolina middle schools. Possible

reasons for the findings, including a discussion of rival hypotheses, are discussed.

Implications and recommendations for future research are also included in the final

chapter.

DEDICATION PAGE

This dissertation is dedicated to my lovely wife, Lori, and my three sons, Chase, Luke, and Jacob. Their love, support, and patience have allowed me the opportunity to pursue my educational goals. Thanks to my father, who has stood by me through the best and worst of times.

I would like to thank my dissertation committee – Dr. Farrington, Dr. Schainker, and Dr. Veitch- whose candid and constructive feedback provided valuable insight from experts in the field of educational leadership. A very special thanks to my committee chair, Dr. Fenwick English, who exemplifies servant leadership through his commitment to the growth of others. It was truly a privilege to work and learn under a professor of his magnitude.

Finally, I must thank Dr. Cathy Zimmer and Teresa Edwards of the Odum Institute. They were instrumental in helping me to design the research methods for this study. The students and staff of UNC-Chapel Hill are fortunate to have such dedicated professionals as a resource for teaching and research.

TABLE OF CONTENTS

LIST OF FIGURES

Figure

LIST OF TABLES

Table

CHAPTER ONE

INTRODUCTION

As middle schools across the nation continue to search for ways to address the

social, emotional, physical, and intellectual needs of young adolescents, the challenge of

meeting ever-changing federal, state, and local testing mandates has created the need for

instructional program reform across all subject areas and grade levels. The current high

stakes testing system can often lead to "quick fix" improvements that, for various

reasons, are never fully realized. These reasons may include financial constraints, lack of

time and other resources, and the inability or unwillingness of school and district leaders

to provide workshops, meetings, conferences, and other professional development

programs that are vital for sustained, long-term instructional reform. These seemingly

chaotic approaches to instructional change create a learning environment that is

fragmented and scattered, forcing principals to search for additional new programs as a

means of attempting to stop the cycle of instructional incoherence and lack of program

coordination.

Based on the instructional challenges facing middle schools and prior literature on

learning, motivation, organizational productivity, and school effectiveness, the concept of

instructional program coherence was introduced in a 2001 study by Newmann, Smith,

Allensworth, and Byrk. Instructional program coherence is defined as a set of

interrelated programs for students and staff that are guided by a common framework for

curriculum, instruction, assessment, and learning climate over a sustained period of time

(Newmann et al., 2001). In order for effective program coherence to take place, a school must have a common instructional framework, supportive staff working conditions, and efficient utilization of school resources (pp. 299-300).

Since the ultimate goal of any instructional reform is to increase the level of teaching and learning in the classroom, it is essential to determine whether instructional program coherence is actually linked to student achievement. This study explored the concept of instructional program coherence and, more specifically, whether indicators of instructional program coherence accounted for separating North Carolina middle schools into the current state categorical scheme in which some units are identified as meeting either expected or high growth standards on student achievement measures while others are classified as not having met expected growth standards.

Under the current state categorical scheme, public schools in North Carolina are considered to be "schools of growth" or "schools not meeting growth standards." At the end of each academic year, schools are stratified based on End-of-Grade Testing (EOG-achievement and growth levels defined by the state) and Adequate Yearly Progress Goals (AYP- federal mandated targets). Schools meeting expected or high growth standards along with having a certain percentage of students performing at or above grade level are considered to be *Honor Schools of Excellence, Schools of Excellence, Schools of Distinction, or Schools of Progress.* Schools not meeting required growth standards and not having a sufficient number of students performing at grade level are labeled as *No Recognition, Priority Schools, or Low-Performing Schools* (North Carolina Department of Public Instruction (NCDPI), 2007). Where a school falls under the current North Carolina categorical scheme inevitably leads to assumptions by educators, policymakers,

and the general public regarding the overall quality of the instructional programs being utilized.

Purpose of the Study and Guiding Research Questions

The major research question for this study was whether randomly selected North Carolina middle schools categorized as meeting expected or high growth standards on student achievement measures exhibited statistically significant differences on indicators of instructional coherence compared to schools not so designated. Within this major research question three guiding questions emerged to serve as integral components of the study:

1. Did middle schools in North Carolina identified as "Schools of Growth" show a statistically significant correlation to indicators of instructional coherence as identified in research conducted on Chicago elementary schools?

2. If the answer to question #1 was statistically significant, were all indicators significant, or were there differentiations within them? If so, in what direction (positive or negative) were the differences?

3. If the randomly selected middle schools did show a statistically significant correlation to the indicators of instructional coherence and student achievement, can the current categorization scheme used in North Carolina be supported by the correlations reported?

Newmann et al. (2001) published a study on instructional program coherence that included 222 elementary schools in Chicago. The researchers found that schools with higher levels of instructional program coherence also displayed greater gains in student achievement using a standardized test as the gauge. Using the Chicago research as an

exemplar, this study was designed to determine if the same relationship held true for randomly selected middle schools in North Carolina. If so, the data could be useful in providing a framework for middle schools attempting to reach higher levels of student achievement and, in turn, empirical support for the current North Carolina ABCs categorization scheme could be proffered.

Importance of the Study

Originally released in 1989, the Carnegie Corporation issued an in-depth and updated reform model in 2000 based on the findings of the Turning Points Network. *Turning Points 2000: Educating Adolescents in the 21st Century* (Jackson & Davis, 2000), provided the framework for middle schools to achieve multiyear, systemic change based on a set of guiding principles (Tung & Feldman, 2001). These principles focus on six areas:

1. Improving teaching, learning, and assessment for all students

2. Building leadership capacity and a professional collaborative culture

3. Engaging in data-based inquiry and decision making

4. Creating a school culture to support high achievement and personal development

5. Networking with like-minded schools

6. Developing district capacity to support school change

Furthermore, students who participate in a Turning Points school are able to:

- Think creatively

- Identify and solve complex and meaningful problems

- Know their passions, strengths, and challenges

- Communicate and work well with others

- Be ethical and caring citizens of a diverse world

Although the Carnegie and Chicago studies investigated two different levels of schooling, it is clear that the concept of instructional program coherence has much in common with current national middle school reform recommendations. For example, the importance of staying focused on a few important goals for curriculum and instruction while avoiding overload and complexity; the power of a common framework and local innovation and adaptation; and building leadership and a collaborative culture are all vital components found in both studies.

Based on the aforementioned studies and other relevant literature showing commonalities between the concept of instructional program coherence and research on multiyear, systemic middle school improvement, there seemed to be a need for further investigation into the possible relationship between program coherence and student achievement at the middle school level. This need is especially critical when considering the plight of public schools in North Carolina, as nearly 50% of traditional 6-8 middle schools are not meeting expected growth standards (NCDPI, 2007). This wide discrepancy may have much to do with the difficulty in balancing the social and emotional needs of young adolescents, while at the same time attempting to provide a challenging curriculum that will engage students and develop their critical thinking abilities. Levin (2000) refers to this balance as the interconnectedness between social context and educational reform.

Limitations of the Study

The North Carolina accountability model, known as the ABCs of Public Education, categorizes schools based on achievement level. Because middle schools are heavily represented in some areas and almost non-existent in others, this study randomly selected schools only from the categories that provided a sufficient number of middle schools to validate a sample for the instructional coherence surveys. However, even with the exclusion of non-represented categories, the study had a statistically significant number of "growth" and "non growth" middle schools from which to sample.

There was some variance in the design as compared to the Newmann et al. (2001) model. This study did not provide a three-year look at growth based on physical observations and face-to-face interviews. Rather, the findings were based on average scores taken from web surveys administered to site-based administrators and teachers via e-mail. The teacher surveys were forwarded by principals via schoolwide e-mail, thus resulting in possible responses from staff members outside of the core subject areas who may not be as familiar with the concept of instructional coherence. The data from the two surveys were then collapsed according to individual school responses and analyzed for the purpose of addressing the guiding research questions. Student achievement data for this correlational study were taken from the 2005-2006 North Carolina End-of-Grade Tests (EOGs).

Although prior research has shown the importance of instructional program coherence when attempting to increase the level of teaching and learning within a school, it should be noted that instructional coherence is not an actual substitute for any individual programs related to teaching and learning. It can, however, provide the

framework for expanding and maximizing existing methods and programs. Furthermore, because of the many internal and external variables that can influence whether students achieve at a high level, instructional program coherence may or may not be perceived as one of the primary factors when determining the success or failure of a school. For example, some schools may have high levels of student achievement with very little coherence, while others may have low levels of student achievement with high coherence (Newmann et al., 2001, p. 313). With these limitations in mind, the positive connection between strengthening instructional program coherence and improving academic achievement has been established in elementary schools, leaving reason to believe a similar positive relationship may also exist at the middle school level.

Definition of Terms

Accountability Basics Control – (ABCs) a plan developed by the North Carolina General Assembly and the North Carolina Department of Public Instruction to improve public schools based upon accountability, back to basics, and local control of schools. The plan was developed in 1995 and implemented in 1996 (NCDPI, 2007).

Adequate Yearly Progress – (AYP) a measure of achievement growth in one year that must be demonstrated by schools under the federal No Child Left Behind (NCLB) Act (No Child Left Behind [NCLB], 2002).

End-of-Grade Test – (EOG) standardized exams distributed to all students in grades 3-8 in the areas of math and reading in North Carolina (NCDPI, 2007). Achievement is measured on a scale of I-IV, with III and above considered to be proficient.

Honor Schools of Excellence- made at least expected growth; at least 90% of students scored at or above Achievement Level III on EOGs; met all AYP target goals (NCDPI, 2007).

Instructional Program Coherence – a set of interrelated programs for students and staff that are guided by a common framework for curriculum, instruction, assessment, and learning climate and are pursued over a sustained period (Newmann et al., 2001).

Low-Performing Schools- failed to meet expected growth standards and have significantly less than 50% of students scoring at or above Achievement Level III (NCDPI, 2007).

Middle Schools – in the traditional North Carolina public school model, this setting serves students in grades 6-8.

No Child Left Behind Act – (NCLB) reauthorized in 2001, a number of federal programs developed to improve K-12 schools by increasing the accountability standards for states, school districts, and schools (NCLB, 2002).

No Recognition- did not make expected growth standards but have at least 60% of students scoring at or above Achievement Level III (NCDPI, 2007).

Non-Growth Schools – under the current North Carolina accountability system, schools that do not meet at least expected growth standards on end-of-grade testing (EOGs).

Priority Schools- less than 60% of students score at or above Achievement Level III and are not Low-Performing Schools (NCDPI, 2007).

Schools of Distinction- made at least expected growth and had at least 80% of students score at or above Achievement Level III on EOGs (NCDPI, 2007).

Schools of Excellence- made at least expected growth and had at least 90% of students score at or above Achievement Level III but did not make AYP (NCDPI, 2007).

Schools of Growth- under the current North Carolina accountability system, schools that achieve at least expected growth standards on End-of-Grade Testing (EOGs).

Schools of Progress- made at least expected growth; at least 60% of students scored at or above Achievement Level III on EOGs (NCDPI, 2007).

State Categorical Scheme - under the current ABC accountability model, schools are categorized by the percentage of students at or above achievement level, growth on end-of-grade tests, and AYP status.

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

With the implementation of high-stakes testing and accountability at the federal, state, and local levels, public schools across the country are constantly searching for quick and innovative ways to meet the ever-increasing demands placed upon them. In turn, school leaders often adopt multiple instructional programs, testing systems, and curricula in hopes of achieving the desired outcomes. However, this approach can also lead to frustration, disorganization, and a lack of program continuity among teachers and administrators. Beginning in the 1990s, research began to show that too many unrelated and unsustained instructional programs were actually causing a decline in student achievement.

This section of the study focuses on the literature surrounding the concept of instructional program coherence, including a review of prior studies and concepts considered to be closely linked to the topic. In addition, this chapter provides an overview of the middle school concept, the role of the school leader, and the accountability model known as the North Carolina ABCs of Public Education. The primary purpose of this review is to synthesize the literature across the main topics in an effort to provide the conceptual framework for a correlational study investigating the possible relationship between instructional program coherence and student achievement.

The Middle Grades Concept

There are a number of core components used to define the middle school concept. Tucker and Codding (1999) discussed several of these core beliefs, including:

- No students falling through the cracks (p. 34)

- Principals as instructional leaders (pp. 54-57)

- Teachers of the same students getting together regularly to share perspectives and make fully informed decisions on what programs to use to get students to standard (p. 35)

- Teachers to follow students across the grades to foster relationships and student responsibility (p. 35)

- Breaking schools into "house" systems to create more intimate settings (p. 39)

- Flexible scheduling allowing teachers to allocate time to the learning needs of students (p. 33)

In order to ensure the success of all middle grades students, *Turning Points 2000* (Jackson & Davis, 2000) set forth the following principles for all middle schools to follow:

- Staff middle schools with teachers who are trained to deal with young adolescents, providing them with continuous and targeted staff development opportunities

- Utilize instructional methods that promote higher-level thinkers and lifelong learners

- Teach a curriculum that is relevant to the concerns of adolescents and based on how they learn best

- Make every effort to involve parents and the larger educational communities to support learning and development

- Create relationships that foster intellectual development and a sense of shared educational purpose

- Practice democratic governance, whether direct or representative, by all school staff members

- Provide a safe and healthy school environment where students learn to become caring and ethical citizens

Many middle schools have made significant structural changes in response to the recommendations listed above. However, as noted by Lipsitz, Mizell, Jackson, and Austin (1997, p. 535), it is now time for middle grades schools to step up and recognize the need for curricular and instructional change as well. Without more effective teaching and learning, the structural changes will only give the feeling that a school is being transformed. Or, as Newmann (1993, p.4) suggests, "Structure without substantive purpose leads nowhere in particular."

Designed to be unique and creative learning communities, middle schools are becoming more and more standardized as state and local agencies continue to mandate standards that seem to run in direct contrast to the development of a coherent and engaging curriculum (Jackson & Davis, 2000). Rather than simply accepting local and state standards as a universal way of approaching teaching and learning, middle schools should use their own criteria to select the standards and objectives that fit the needs of each individual program (Jackson & Davis). As Mitchell (1996, p. 16) states, establishing school standards should be "more a matter of selection than creation." In

response to this idea of developing more autonomous middle school programs, several

organizations (Education Trust, National Education Goals Panel, and the National Center

on Education and the Economy) identified key components for the development of

academic standards that create excellence and equity for all children. Their

recommendations included:

- Emphasizing the importance of knowing the concepts and principles across all

  disciplines (Mitchell, 1996, p. 22; National Education Goals Panel [NEGP], 1993,

  p. 13; Tucker & Codding, 1998, p. 57).

- Ensuring academic standards are useful and clear in order to teach students how

  to become productive citizens and lifelong learners (Mitchell, 1996, p. 22;

  National Education Goals Panel [NEGP], 1993, p. 13; Tucker & Codding, 1998,

  p. 57).

- Maintaining standards that are rigorous, accurate, and sound, while at the same

  time avoiding the use of too many words when describing them. Standards that

  are lengthy and complex will prevent students from being able to truly master the

  concepts (Mitchell, 1996, p. 22; National Education Goals Panel [NEGP], 1993,

  pp. 13-14, 22; Tucker & Codding, 1998, p. 57).

- Creating academic standards that are assessable. According to Bloom (1956, 210-

  207) and Mitchell (1996, p. 22), student assessment should be based on such

  actions as analysis, comparison, problem solving, and connecting. These types of

  actions can be evaluated more easily by utilizing authentic measures of

  assessment.

- Maintaining developmental standards that are appropriate to the age levels of the students being taught. Simply repeating the same topics and objectives across grade levels will do little to help students reach new levels of learning (Mitchell, 1996, p. 23; NEGP, 1993, pp. 15-16).

- Recognizing that teachers, parents, and community members who know the needs of the students and school should be involved in the creation and implementation of the academic standards (Mitchell, 1996, p. 19, 22; NEGP, 1993, p. 13; Tucker & Codding, 1998, p. 57).

- Ensuring that standards are adaptable and flexible to allow for variance across localities (NEGP, 1993, p. 15; Tucker & Codding, 1998, p. 57).

Assumptions and Limitations of the Middle School Concept

Brown, Roney, and Anfara (2003) discovered that the implementation of the middle school concept was not enough to reform a middle school that was struggling in areas such as communication, decision-making, and instructional delivery. If teachers and school leaders focus on structural change alone, there will not be enough time spent on instructional or student issues (McNeil, 2005; Supovitz & Christman, 2005). In addition, various factors outside of the core middle school values have caused traditional 6-8 programs to disappear in many areas, particularly in large urban districts where schools with larger populations have moved to smaller K-8 programs (Erb, 2006). Though research has shown the negative effects of school size on student achievement (Johnson, Howley, & Howley, 2002; Howley, Strange, & Bickel, 2000; Lee & Loeb, 2000; Raywid, 1998; Spense, 2000; Trimble, 2002; Wasley et al., 2000), it is unfortunate to see so many schools escaping to K-8 programs when research clearly shows that the

14

middle school model proposed in *Turning Points 2000* (Jackson & Davis) can help to achieve overwhelmingly positive results related to student achievement and behavioral outcomes (Anfara & Lipka, 2003; Backes, Ralston, & Ingwalson, 1999; Davis & Thompson, 2004; Erb & Stevenson, 1999; Felner et al., 1997; Flowers, Mertens, & Mulhall, 1999, 2000, 2003; Mertens & Flowers, 2003; Picucci, Brownson, Kahlert, & Sobel, 2004; Stevenson & Erb, 1998; Warren & Muth, 1995).

According to Erb (2006), it should not be assumed that implementing various grade configurations, such as K-8 schools, will enable young adolescents to experience academic success. Successful middle grades programs start with highly qualified teachers in schools with strong leadership (Erb). Nor should it be assumed that all middle schools have adopted a systemic approach to implementing the *Turning Points 2000* recommendations (Jackson & Davis). Given the complexity of the middle school reform model, it would be easy for schools to downsize improvement efforts (Huberman & Miles, 1984). The further along a school is in adopting and implementing the middle school reform principles, the greater the impact on student achievement (Felner et al., 1997, pp. 528-550). This holistic approach starts with the school leader, who can either promote or hinder the process (Erb). Along with actually understanding what the middle school concept is all about, the principal has to create a healthy organizational climate that stresses the importance of practicing the concept on a daily basis. Collins (2001) sums it up by stating that consistency, coherence, and cranking the flywheel in the same direction for a sustained period of time are required for success in the middle grades.

A Call for Instructional Reform

In 1996 The Center on Organization and Restructuring of Schools published the results of a five-year study on the effects of school restructuring on student performance. Directed by Fred Newmann (1996), the study found that school restructuring can lead to increased student learning. Four key factors were isolated as focal points for any school restructuring effort:

1. *Student Learning* – high-achieving schools always focus on student learning when planning, implementing, and assessing new approaches to instruction

2. *Authentic Pedagogy* – bringing a vision for high quality learning to life with the instructional techniques and assessment tools used in the classroom

3. *School Organizational Capacity* – building the capacity of the staff to work as a cohesive professional unit

4. *External Support* – providing sustained support for staff development, setting standards for high learning, and allowing increased autonomy can enhance student learning and the overall organizational capacity

Prior to the release of the 1996 study on the restructuring of schools, much of the work related to reform and restructuring referred to specific site-based programs (e.g., flexible scheduling, team teaching, and thematic units). While quality individual programs are essential to the success of any school, Newmann's findings opened the door for additional research related to the bigger picture, that is, the internal and external components that make up the organizational capacity of a learning community.

The Consortium for Policy Research in Education published a 1999 study (Cohen & Ball) that echoed the findings of Newmann three years earlier. In this paper, the

research team found that schools operate as complex social organizations, and as such they must rely on the intervention of other complex social structures in order to maximize instructional capacity and successfully meet school improvement goals (p. 1). The reality, according to Cohen and Ball, is that school leaders, curriculum coordinators, and instructors often view themselves as independent of their outside environments. They go on to state,

> The chief reason for this view is that the United States is inhospitable in many respects to serious instructional improvement. The environments in which capacity-building efforts operate lack many of the resources that support improvement – a shared language of professional discourse, professional socialization leading to shared norms and standards of work, traditions of common work on teaching and learning, opportunities for professional learning, social and economic support for demanding instruction, and professional norms and incentives that support improvement. (p. 28)

The findings from the aforementioned studies suggest a need for schools to address the growing demands of preparing students for an intellectually demanding world. This would entail replacing the basic-skills-only instruction with a more stimulating, "real world" approach to instruction. In light of this actualization, Newmann, Bryk, and Nagaoka (2001) published a study of Chicago teachers in grades 3, 6, and 8. The researchers found that teachers who assigned more challenging intellectual work also witnessed a greater gain in student achievement based on the Iowa Tests of Basic Skills. The study developed criteria guiding the type of authentic intellectual work that should exist at all levels of learning:

- *Construction of Knowledge* (p. 14) – involves organizing, interpreting, evaluating, or synthesizing prior knowledge to solve new problems

- *Disciplined Inquiry* (pp. 14-15) – utilizing a prior knowledge base, striving for in-depth understanding rather than superficial awareness, and expressing ideas and findings with elaborated communication

- *Value Beyond School* (p. 15) – students working to achieve intellectual accomplishments that stretch far beyond the school; this starts with the ability of the teacher to produce creative assignments that can be connected with prior experience

The researchers remind us that all criteria listed above must be met in order to provide students a foundation for success in the modern world. One component is not more important than the other; each must be understood and valued by the teachers.

The call for instructional reform continued when Smith, Lee, and Newmann (2001) published a study that linked interactive (authentic) teaching with higher levels of learning. The authors of this study concluded that students can produce work of higher intellectual quality when challenged to do so and when the proper organizational capacity exists to support it (p. 32). Teacher characteristics of an interactive classroom may include (p. 11):

- Guiding, coaching, and listening to students

- Posing questions that ask for explanations and which may have multiple answers

- Assessing how students arrived at answers

- Providing choices in what students study

Students participating in an interactive classroom may be observed (p. 11):

- Discussing answers and ideas with teachers and peers

- Trying to apply, interpret, and integrate knowledge into prior understanding

- Frequently choosing what questions or topics to study

Prior research has clearly revealed the need for instructional reform as schools search for ways to meet accountability standards and prepare students for the intellectual and social demands of modern society. The following section will focus on the person most responsible for the creation and implementation of instructional change within a school: the principal.

The Role of the Instructional Leader

In today's educational setting, principals are commonly referred to as instructional leaders. In reality, many school leaders get lost in the environmental, social, and organizational distracters that lead to fragmented and uneven instructional focus (Supovitz & Poglinco, 2001). Principals are typically involved in management issues and leave the instructional decisions up to the individual teachers (Supovitz & Poglinco). When this happens, according to Supovitz and Poglinco, three things tend to occur:

1. The instructional culture of the school tends to splinter, as there is no overriding instructional guidance and no coherence.

2. The quality of instruction varies widely, as teachers bring in different notions of what good teaching and learning should be.

3. The content that students receive, even within the same grade levels, differs based on what teachers feel students *should* know.

The authors believe that when supported with the proper tools and resources, school leaders can overcome these tendencies. Based on data from practicing school administrators, three themes emerged as crucial elements of instructional leadership.

First, instructional leaders organized their schools around an emphasis on instructional improvement supported by a district vision of instructional quality. Second, instructional leaders cultivated a community of instructional practice in their schools, creating safe and collaborative environments for teachers to engage in their work and drawing upon a wide network of individuals to deepen the work. Third, instructional leaders reorganized their own professional lives, time, and priorities to support instructional improvement. Through these three overarching strategies, instructional leaders shifted the priorities of their schools toward a more disciplined emphasis on improving student performance. (p. 1)

School principals make hundreds of decisions each day, some more pressing than others. Only by making the decision to place instructional improvement at the forefront of school improvement will leaders begin to see a change in student performance. This decision requires the promotion of a unified vision of instructional quality, gaining community support for the restructuring efforts, and creating an organizational emphasis on the improvement of teaching and learning (Supovitz & Poglinco, 2001, p. 18).

English and Steffy (2001) provided further insight into the importance of curriculum leadership practice. The authors discussed the importance of creating a learning environment that promotes common learning goals and instructional and assessment strategies, along with a tighter curriculum across grade levels that avoids repetition and ensures continuity. For this to happen, according to English and Steffy, principals must be aware of what is going on in their schools. Maintaining high visibility

and providing consistent and productive feedback to teachers are key elements of curriculum leadership practice. Downey, Steffy, English, Frase, and Poston (2004) developed a short walk-through model that allows principals the opportunity to access meaningful information in the classroom, including:

- Student engagement in learning

- Lesson objective(s) – what is being taught

- How the teacher is delivering instruction

- Intellectual complexity of the lesson

- Evidence of past student work posted in the classroom

- Health or safety concerns that may need attention

The data collected from the walk-throughs can be used to facilitate a reflective conversation between the instructional leader and classroom teacher (Downey et al., 2004). Knowing the stakes are high for student performance, principals must utilize models such as these to hold teachers accountable for teaching and learning within their classrooms. Implemented properly on a consistent basis, this type of dialogue can foster a setting where teachers are more capable of learning, growing as professionals, and, most importantly, able to effectively deliver quality instruction to all students.

The Middle Grades Principal

The previous section discussed the role of the principal as instructional leader. This chapter will now focus on the skills and knowledge required of effective middle school leaders who are working to create a coherent set of values, or synergy, within their schools.

Dimmock and Walker (2004) argue that schools can become dependent on short-term approaches to strategic leadership and lose sight of creating a more long-term design connecting the various complex elements that make up a school. They stress the importance of leadership that can meet the demands of both short-term crises and long-term change. It is vital for middle grades principals to adapt to the individual needs, or situational context (Dimmock & Walker), of the school in order to establish connectivity and consistency. Once a leader has connected strategic intent and leadership with short- and long-term school improvement goals specific to the needs of the students, then coherence may be achieved.

Effective middle grades principals must also possess leadership characteristics that are as unique as the students they serve. In a study of middle grades principals, Kilcrease and Jones (1995) identified three broad functions that should be performed in order to achieve success:

1. Providing a program especially adapted to diverse student needs
2. Promoting continuity of education
3. Introducing needed innovations in curriculum and instruction

Along with the functions listed above, George and Grebing (1992) found that middle school administrators should have the skills to facilitate teaming and shared decision making within their schools as well as the ability to understand the attitudes and leadership skills among staff members (Whittaker & Valentine, 1993). Williamson (1991) provides an even broader description when defining the middle school principal as an inspirational leader, human resource developer, and change agent.

Recognizing the unique and complex nature of middle schools, the National Association of Elementary School Principals (NAESP, 2001) published a list of proficiencies that characterize effective middle grades leadership. Middle grades principals should:

Lead schools in a way that places student and adult learning at the center

- Create and foster a community of learners

- Embody learner-centered leadership

- Seek leadership contributions from multiple sources

- Tie daily operations to school and student learning goals

Set high expectations and standards for the academic and social development of all students and the performance of adults

- Articulate a clear vision that reflects the beliefs, values, and commitments of the school community

- Ensure that all students have adequate and appropriate opportunities to meet high standards

- Develop a school culture that is flexible, collaborative, innovative, and supportive of efforts to improve achievement of all students

Demand content and instruction that ensure student achievement of agreed-upon academic standards

- Hire and retain high-quality teachers and hold them responsible for student learning

- Monitor alignment of curriculum with standards, school goals, and assessments

- Observe classroom practices to ensure that all students are meaningfully engaged in active learning

- Provide up-to-date technology and instructional materials

- Review and analyze student work to determine whether students are being taught to standard

Create a culture of continuous learning for adults tied to student learning and other school goals

- Provide time for reflection as an important part of improving practice

- Invest in teacher learning

- Connect professional development to school learning goals

- Provide opportunities for teachers to work, plan, and think together

- Recognize the need to continually improve principals' own professional practice

Use multiple sources of data as diagnostic tools to assess, identify, and apply instructional improvement

- Consider a variety of data sources to measure performance

- Analyze data using a variety of strategies

- Use data as tools to identify barriers to success, design strategies for improvement, and plan daily instruction

- Benchmark successful schools with similar demographics to identify strategies for improving student achievement

- Create a school environment that is comfortable using data

Actively engage the community to create shared responsibility for student and school

success

- Engage the community to build greater ownership for the work of the school

- Share leadership and decision-making

- Encourage parents to become meaningfully involved in the school and in their own children's learning

- Ensure that students and families are connected to the health, human and social services they need to stay focused on learning

In a qualitative study exploring the personal characteristics, job roles and tasks, and professional beliefs related to the middle school principalship (Anfara, Brown, Mills, Hartman, & Mahar, 2000), it was revealed that middle level leaders:

1. Have a positive view of their work and seem satisfied with their job experience

2. Are more teacher-oriented and strive to provide planning and professional development time for teachers

3. Support parent/community involvement in their schools

4. Are tolerant of uncertainty and ambiguity

5. Make every effort to recruit and retain educators who want to be in middle school

The researchers involved in this study also point to the fact that more specific training is needed to prepare middle grades administrators. Practicing school leaders cannot be expected to create meaningful programs and experiences without professional training that is specific to the social, emotional, physical, and educational needs of young adolescents (Anfara et al., p. 35).

Instructional Program Coherence: A Framework for School Improvement

The adoption of too many unrelated and unsustained instructional programs has caused many schools to fall short of meeting state and local accountability measures for student achievement over the past decade. In 2001, Newmann et al. released a breakthrough study that, for the first time, provided a conceptual framework designed to address the apparent disconnect between instructional improvement programs and student achievement. This concept, known as *instructional program coherence*, caused a shift in the way many schools now approach program reform.

Although some studies have indirectly addressed the topics of instructional program coherence (Cohen & Ball, 1996; Smith, Smith, & Bryk, 1998) and organizational factors related to student learning (Bryk, Lee, & Holland, 1993; Coleman, Hoffer, & Kilgore, 1982; Hill & Celio, 1998; Sergiovanni, 1994), the Newmann et al. (2001) study was the first to bring the concepts together for the purpose of creating an operational definition and framework for the development of greater instructional program coherence within a school (Newmann et al., pp. 298-299).

The researchers involved in the 2001 Newmann et al. study on instructional program coherence gathered data from 222 Chicago elementary schools over a three-year period, including information from over 80,0000 students and 5,000 teachers (p. 302). The study showed a strong positive relationship between increased levels of coherence and improved student achievement (p. 305). With the empirical evidence taken from the quantitative analysis of the Chicago study, it seemed critical to further investigate the possible link between instructional program coherence and student achievement at all levels of schooling.

Defining and Framing the Concept of Instructional Program Coherence

The Newmann et al. (2001) study defined instructional program coherence as

a set of interrelated programs for students and staff that are guided by a common framework for curriculum, instruction, assessment, and learning climate and are pursued over a sustained period. (p. 297)

The authors also provided a conceptual framework for instructional program coherence. This framework, consisting of three major components, served to guide the teacher and principal surveys distributed as part of the correlational study (Chapter Four).

1. A common instructional framework guides curriculum, teaching, assessment, and learning climate. The framework combines specific expectations for student learning with detailed strategies and materials to guide teaching and assessment (p. 299). This would mean:

   a. Curriculum, instructional strategies, and assessments of students are coordinated among teachers within a grade level.

   b. Curriculum and assessments of students proceed logically from one grade level to the next and offer a progression of increasingly complex subject matter rather than repeating rudimentary material previously taught.

   c. Key student support programs, such as tutoring, remedial instruction, parent education, and opportunities for parent involvement focus consistently on the school's instructional framework.

2. Staff working conditions support implementation of the framework. (p. 299)

   a. Administrators and teachers expect one another to implement the framework.

b. Criteria for recruiting and hiring teachers emphasize commitment to and competence in executing the framework.

c. Teachers are evaluated and held accountable largely on the basis of how effectively they use the common instructional framework.

d. Professional development opportunities for staff are focused on the common instructional framework, and professional development on complex topics is pursued over a sustained period.

3. The school allocates resources such as funding, materials, time, and staff assignments to advance the school's common instructional framework and to avoid diffuse, scattered improvement efforts, with the following results (p. 300):

a. Curriculum and student assessments remain stable over time.

b. Teachers' professional assignments are stable enough that teachers have sustained opportunities to learn how to teach well in their specific roles.

Figure 2.1 below provides a visual framework for the relationship suggested by the 2001 Chicago study on Instructional Program Coherence (Newmann et al.). The empirical evidence based on the findings connects school improvement efforts that strengthen instructional program coherence to an increase in student achievement. This framework also served to adduce the hypothesized relationship between instructional coherence and student achievement.

```
┌─────────────┐      ┌─────────────┐      ┌─────────────┐
│ School      │      │ Level of    │      │ Student     │
│ Improvement │ ──▶  │ Instructional│ ──▶  │ Achievement │
│ Framework   │      │ Program     │      │             │
│             │      │ Coherence   │      │             │
└─────────────┘      └─────────────┘      └─────────────┘
```
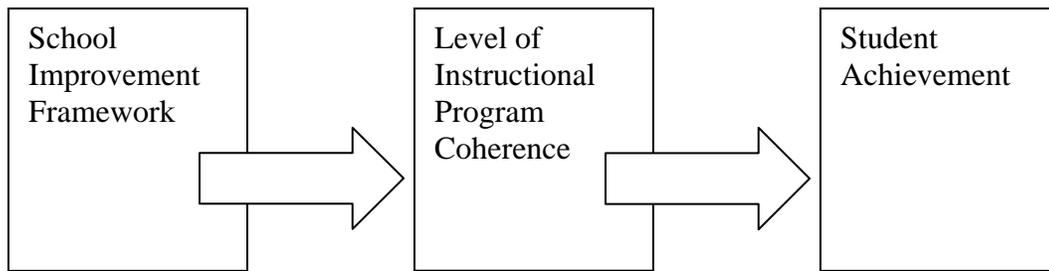
Figure 2.1. An Hypothesized Relationship Between Coherence and Student Achievement

Implications for Middle Schools

The review of literature surrounding the concept of instructional program coherence has ramifications that stretch far beyond the study of elementary schools in Chicago. Researchers have openly acknowledged the need for future studies investigating the possible importance of instructional coherence at all levels of schooling (Newmann et al., 2001). With so many middle schools relying heavily on programs such as team teaching, co-teaching, vertical planning, and the development of interdisciplinary units, there was a clear need to determine whether instructional program coherence could also have the same affect on adolescent teaching and learning. If there was indeed a positive relationship between instructional coherence and student achievement at the middle school level, then school leaders should take notice of the possible implications and act accordingly. Newmann et al. discussed four ways that instructional program coherence can be cultivated at various leadership levels:

1. Principals could place more of an emphasis on developing a common
   instructional framework consisting of a few core goals and objectives. This

would be the centerpiece of professional development activities, improvement

plans, and the acquisition of instructional materials. (p. 315)

2. Staff development providers could work toward the implementation of

effective teaching and learning across classes and grade levels as opposed to

targeting a few individual teachers. (pp. 315 & 316)

3. District leaders could stress the importance of school improvement centered

on instructional program coherence. This would include the development of

curriculum standards and assessments that more closely resemble greater

integration and learning across subjects and grade levels. (p. 316)

4. State funding programs could be focused on schoolwide programs that are

sustained over a period of several years and relate to a clear common

instructional framework. (p. 316)

The final section of this literature review will provide a brief overview, including

possible limitations, of the North Carolina testing accountability model known as the

ABCs of Public Education. This accountability model categorizes schools based on

academic growth and proficiency. It also served as a measuring tool for school

performance as this study investigated the possible relationship between instructional

coherence and student achievement at the middle school level.

History and Framework of the North Carolina ABCs

The North Carolina State Board of Education (SBE) adopted the Accountability

Basics Control (ABCs) of Public Education in June 1996 (NCDPI, 2007). This

accountability model sets performance and growth standards for K-12 schools based on

End-of-Grade (EOG) and End-of-Course (EOC) tests. Schools that meet the state-

mandated standards receive various types of incentives and awards. Those not achieving

growth and performance standards may receive state intervention as required by the SBE.

There were 2,353 public schools in North Carolina included as part of the 2005-06 ABCs

report.

The term accountability refers to the policies and practices used to hold schools

responsible for teaching and learning (LEARN NC, 2007). Accountability may serve to

assess teachers and students based on standardized tests, to reward or sanction schools

according to academic performance, and to compare/publicize the performance of

schools across the state in an effort to categorize achievement levels and allocate funding

(LEARN NC). The North Carolina Department of Public Instruction (NCDPI) details the

North Carolina ABCs accountability model with five priorities for excellent schools:

1. High student performance

2. Healthy students in safe, orderly, and caring schools

3. Quality teachers, administrators, and staff

4. Strong family, community, and business support

5. Effective and efficient operation

Based on the North Carolina accountability model, students are required to meet

statewide standards in order to be promoted from grades, 3, 5, and 8. The standards are

designed to ensure students are working at grade level in reading, mathematics, and

writing (LEARN NC).

In 1999 the SBE created clearly defined goals and performance standards for the

purpose of preparing students with the necessary knowledge and skills to enter the

workforce. For middle school students, the primary goal was to develop basic reading,

31

writing, and math skills in preparation for the high school curriculum. In order to achieve

grade-level proficiency, students must score at Level III or above on end-of-grade tests.

The 2007 Accountability Report published by the North Carolina Department of

Public Instruction details the features of the new growth formulas adopted in 2006 (used

for the first time with the 2005-2006 EOGs). Based on lessons learned from previous

experience with the state accountability model, the new formulas featured the following

components:

- Using two years of actual student performance to predict future performance

- Expected growth based on expectation that students will perform on the same

  level from year to year

- Provide data on student performance and growth along with school-level data

- Use a change scale (c-scale) to compare student performance across various test

  editions

- Schools must have at least 60% of students at expected growth before achieving

  High Growth recognition status

The state accountability model focuses on three measures (NCDPI, 2007):

1. Performance Composite- Percentage of students scoring Level III or above (based

   on set standards mandated by the state)

2. Growth- How much students learned from one year to the next

3. AYP Status- Schools and sub-groups expected to achieve proficiency standards as

   set by the state (following federal guidelines)

There are seven possible recognition categories (Table 2.2.) for public schools based on

the North Carolina ABCs of Public Education. The categories include: Honor Schools of

Excellence; Schools of Excellence; Schools of Distinction; Schools of Progress; Non-Recognition Schools; Priority Schools; and Low-Performing Schools (NCDPI, 2007). Among all K-12 public schools included in the categorization scheme above, 54.3% met either expected or high growth standards for the 2005-2006 academic year. Traditional middle schools serving students in grades 6-8 comprised over 20% of the schools in the report, yet less than 50% of those schools met either expected or high growth standards based on the 2005-2006 ABCs (NCDPI, 2007).

Table 2.2. North Carolina ABCs: School Status Labels and Recognitions (NCDPI, 2007)

Performance Level (based on percent of students scoring Level III or above)	Schools Making Expected Growth or High Growth	Schools Making Less than Expected Growth
90% to 100%	Honor School of Excellence School of Excellence	No Recognition
80% to 89%	School of Distinction	No Recognition
60% to 79%	School of Progress	No Recognition
50% to 59%	Priority School	Priority School
Less than 50%	Priority School	Low Performing

Possible Limitations of the ABCs Model

Goldstein and Behuniak (2005) published an article that explored various growth models utilized by nine states, including the one used in North Carolina to evaluate student and school performance. In this study, it was suggested that North Carolina's high proficiency rate (75% of all schools in 2003-2004) on standards-based testing should signal the need for an overhaul of the testing system (Waggoner, 2005).

There was a major issue regarding the North Carolina testing data in 2003-2004. During that academic year, only two of 388 middle schools in the state were categorized at meeting expected growth standards on the sixth-grade reading assessment (Goldstein & Behuniak, 2005). These results seemed to go directly against the significantly higher percentage of students performing at or above grade level in other grades and subject areas. Because of the fluctuation of scores and seemingly inconsistent statistical accuracy of the formula used to measure performance and growth, many teachers, administrators, and even SBE advisory council members questioned the validity of the model (Keung Hui, 2004).

North Carolina does not provide analyses by socioeconomic status or other variables related to demographic features (Goldstein & Behuniak, 2005). However, Ladd and Walsh (2002) found that schools serving a disproportionate number of white and high income students tend to achieve higher levels of recognition under the current accountability model when compared to schools serving students from racially diverse or disadvantaged backgrounds. The study goes on to suggest that teachers in the more white and affluent schools stand a much better chance of receiving bonuses based on ABC performance and state categorization.

In another study designed to compare state proficiency standards with the National Assessment of Educational Progress (Peterson & Hess, 2006), the following description was used to grade North Carolina's accountability model:

> In addition, states with already low standards have done nothing to raise them. Oklahoma and Tennessee once again share the cream puff award, with both states earning Fs because their self-reported performance is much higher than can be justified by the NAEP results. States with nearly equally embarrassing D minuses include Mississippi, Georgia, and North Carolina. Once again, we discover that Suzy could be a good reader in North Carolina, where standards are low, but a failure in neighboring South Carolina, where standards are higher. (p. 28)

The data provided by Peterson and Hess point to a situation where certain states, such as North Carolina, are achieving dramatic increases in student proficiency by grading test scores against lower standards. Other states, in contrast, are dealing with a decrease in proficiency scores as a result of higher state standards. Time will tell whether this approach will prove to be a major limitation as the North Carolina accountability model continues to evolve.

CHAPTER THREE

METHODOLOGY

Introduction

The ultimate goal of any instructional reform is to increase the overall quality of

teaching and learning in the classroom. Therefore, it was essential to determine whether

the concept of instructional program coherence could be linked to student achievement at

the middle school level. As discussed earlier, the 2001 Chicago study (Newmann et al.)

provided empirical evidence of a positive relationship between instructional coherence

and student achievement in elementary schools. This particular study looked at the

concept of instructional program coherence and, more specifically, whether indicators of

instructional coherence could account for separating North Carolina middle schools into

the current state categorical scheme in which some units are identified as meeting either

expected or high growth standards on student achievement measures while others are

classified as not having met expected growth standards.

Under the current state categorical scheme, public schools in North Carolina are

considered to be "schools of growth" or "schools not meeting growth standards." At the

end of each academic year, schools are stratified based on End-of-Grade Testing (EOG-

achievement and growth levels defined by the state) and Adequate Yearly Progress Goals

(AYP- federal mandated targets). Schools meeting expected or high growth standards are

considered to be Honor Schools of Excellence, Schools of Excellence, Schools of

Distinction, or Schools of Progress. Schools not meeting required growth standards are

labeled as No Recognition, Priority Schools, or Low-Performing Schools (North Carolina Department of Public Instruction (NCDPI), 2007).

<p style="text-align:center;">*Purpose of the Study and Guiding Research Questions*</p>

The major research question for the study was whether randomly selected North Carolina middle schools categorized as meeting expected or high growth standards on student achievement measures exhibited statistically significant differences on indicators of instructional coherence compared to schools not so designated. Within this major research question three sub-questions served to guide the study:

1. Did middle schools in North Carolina identified as "Schools of Growth" show a statistically significant correlation to indicators of instructional coherence as identified in research conducted on Chicago elementary schools?

2. If the answer to question #1 was statistically significant, were all indicators significant, or were there differentiations within them? If so, in what direction (positive or negative) were the differences?

3. If the randomly selected middle schools did show a statistically significant correlation to the indicators of instructional coherence and student achievement, could the current categorization scheme used in North Carolina be supported by the correlations reported?

<p style="text-align:center;">*Conceptual Framework*</p>

A conceptual framework for instructional program coherence is described below (Newmann et al., 2001). This framework contains the essential components and conditions necessary for the development of effective program coherence at the school level.

1. A common instructional framework guides curriculum, teaching, assessment, and learning climate. The framework combines specific expectations for student learning, with specific strategies and materials to guide teaching and assessment (p. 299). This would mean:

   a. Curriculum, instructional strategies, and assessments of students are coordinated among teachers within a grade level.

   b. Curriculum and assessments of students proceed logically from one grade level to the next and offer a progression of increasingly complex subject matter rather than repeating rudimentary material previously taught.

   c. Key student support programs, such as tutoring, remedial instruction, parent education, and opportunities for parent involvement focus consistently on the school's instructional framework.

2. Staff working conditions support implementation of the framework. (p. 299)

   a. Administrators and teachers expect one another to implement the framework.

   b. Criteria for recruiting and hiring teachers emphasize commitment to and competence in executing the framework.

   c. Teachers are evaluated and held accountable largely on the basis of how effectively they use the common instructional framework.

   d. Professional development opportunities for staff are focused on the common instructional framework, and professional development on complex topics is pursued over a sustained period.

3. The school allocates resources such as funding, materials, time, and staff assignments to advance the school's common instructional framework and to avoid diffuse, scattered improvement efforts, with the following results (p. 300):

  a. Curriculum and student assessments remain stable over time.

  b. Teachers' professional assignments are stable enough that teachers have sustained opportunities to learn how to teach well in their specific roles.

Figure 2.1 provides a visual framework demonstrating the hypothesized relationship between school improvement efforts that strengthen instructional program coherence and higher levels of student achievement at the middle school level. This diagram is supported by the findings of the 2001 Chicago study which suggested a similar linkage in elementary schools.

| School Improvement Framework | → | Level of Instructional Program Coherence | → | Student Achievement |
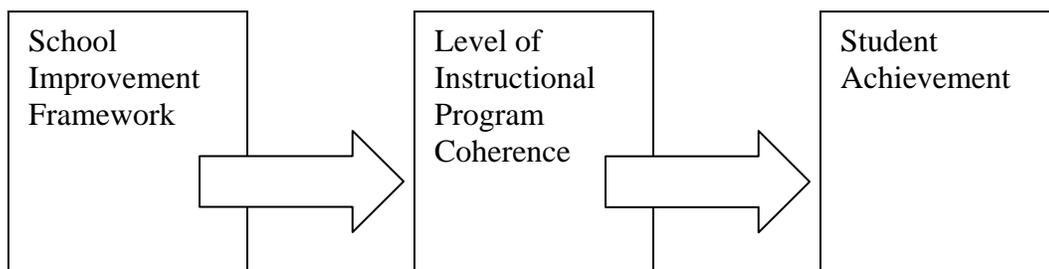
Figure 2.1. An Hypothesized Relationship Between Coherence and Student Achievement

Site Selection and Participants

Citing the 2001 Newmann et al. research on 222 elementary schools in Chicago, this quantitative study explored the level of instructional program coherence in selected North Carolina middle schools. The study then determined whether there was a statistically significant correlation to instructional coherence and student achievement and, if so, how it supported the current categorization scheme used by the ABCs of Public Education in North Carolina.

The sampling frame consisted of a stratified random sample based on the state categorical scheme used to identify the performance and growth levels of schools under the current ABCs model in North Carolina. A random sample consisting of 50% of the middle schools from each category was selected. The categories were comprised of:

- Honor Schools of Excellence

- Schools of Excellence

- Schools of Distinction

- Schools of Progress

- No Recognition

- Priority Schools

- Low-Performing Schools

Given the fact that middle schools are well represented in some categories and almost non-existent in others, the stratification was consolidated into two distinct groups for the purpose of determining a possible correlation between instructional program coherence and student achievement: *Schools of Growth* and *Schools Not Meeting Growth Standards*. Based on the 2005-2006 ABCs data, there were over 200 middle schools

represented in each category. This means the stratified random sample for the study included 100 schools from each of the two groupings.

The surveys used for this study were taken from the Newmann et al. (2001) research on instructional program coherence. The teacher survey (Appendix A), with a reliability of 0.82, was administered to measure teacher perceptions of program coherence within their schools. The principal survey (Appendix B), which had a 93% success rate based on the comparison of observations made by authors and site-based lead researchers looking for 13 key indicators of instructional program coherence in Chicago elementary schools (p. 303), was sent to school leaders for the purpose of determining the extent, or level, of instructional program coherence in each middle school.

Both surveys used in this study were delivered via the Internet. The size of the stratified random sample helped to compensate for the predicted lower response rate with web surveys. An informed consent/information letter for the study was embedded in the initial survey sent to principals (Appendix C) as well as the follow-up survey distributed to teachers (Appendix D). Once the principal surveys were completed and submitted to the researcher using the *Qualtrics* software, the teacher surveys were then e-mailed to principals and forwarded as a link to staff members.

Data Collection

After data were collected through the *Qualtrics* software system over a period of six weeks, the responses were then synthesized and collapsed based on individual school responses. After averaging teacher and administrator scores across all questions, a school-level value for instructional program coherence was assigned to each middle

school. The school-level aggregated values were then analyzed (using *SPSS Version 15*) to determine if there was a statistically significant correlation between indicators of instructional program coherence and student achievement in selected North Carolina middle schools. In addition, the findings from the correlational study were analyzed to determine if they provided empirical support for the current categorization scheme endorsed by the North Carolina ABCs of Public Education, which stratifies schools based on academic proficiency and growth on state-mandated tests.

CHAPTER FOUR

PROCEDURES AND FINDINGS

Introduction

The purpose of this quantitative study was to investigate whether randomly

selected North Carolina middle schools categorized as meeting expected or high growth

standards on student achievement exhibited statistically significant differences on

indicators of instructional program coherence when compared to schools not so

designated. This chapter presents the data analysis process and findings from the study.

The first section will take a closer look at the guiding research questions, statistical

procedures used for analysis, the sample population used as the target group for the study,

and will include general observations based on the frequencies from the two surveys.

Section 2 provides findings for each research question and data analysis procedures. The

third section includes ancillary findings and a summary of the chapter.

Section 1

Research Questions and Procedures

The three guiding research questions for this correlational study, including

statistical procedures utilized to research the answers, can be found in Table 1. Research

Questions 1 and 2 were designed to determine whether a statistically significant

relationship existed between indicators of instructional program coherence and student

achievement at the middle school level and, if so, to identify which indicators were

significant and point out any differentiations (positive or negative) within them.

Research Question 3, based on findings from questions 1 and 2, was designed to examine

whether the current categorization scheme used in North Carolina (ABCs of Public

Education) could be supported by the possible link between instructional program

coherence and student achievement at the middle school level.

Table 4.1. Research Questions and Procedures

Research Question	Statistical Procedure
1. Did middle schools in North Carolina identified as "Schools of Growth" show a statistically significant correlation to indicators of instructional coherence as identified in research conducted on Chicago elementary schools?	*SPSS Version 15* Pearson *Qualtrics*
2. If the answer to question #1 was statistically significant, were all indicators significant, or were there differentiations within them? If so, in what direction (positive or negative) were the differences?	*SPSS Version 15* Pearson Bivariate Correlations *Qualtrics*
3. If the randomly selected middle schools did show a statistically significant correlation to the indicators of instructional coherence and student achievement, could the current categorization scheme used in North Carolina be supported by the correlations reported?	*SPSS Version 15* Pearson Bivariate Correlations 2005-2006 North Carolina ABCs of Public Education

Descriptive Data

The initial step in analyzing the data involved a review of the descriptive statistics for each variable. Using both the *SPSS* and *Qualtrics* software systems, frequency charts were created for teacher and principal responses to the web survey on indicators of instructional program coherence. Tables 4.2 and 4.3 display the frequencies with which respondents perceived their middle schools to exhibit the indicators of instructional program coherence.

The survey questions used for this study were taken from the Newmann et al. (2001) research on instructional program coherence. The teacher survey, with a reliability of .82, was administered to measure teacher perceptions of program coherence within their schools. The principal survey, which had a 93% success rate based on the comparison of observations made by authors and site-based lead researchers looking for 13 key indicators of instructional program coherence in Chicago elementary schools (p. 303), was sent to school leaders for the purpose of determining the extent, or level, of instructional program coherence in each school.

Both surveys used in this study were delivered as web-based surveys. The size of the stratified random sample served to compensate for the lower response rates that are typical of web surveys. Once the principal surveys were submitted to the researcher via *Qualtrics* software, the teacher surveys were then e-mailed to principals and forwarded as a link to staff members. As Table 4.3 demonstrates, there was some variance in the total number of responses (N) on the teacher survey. Because of this variance, Table 4.3 also reflects a lower response rate on Questions 1, 2, and 5. The principal survey had a 100%

response rate across all 13 questions based on the 71 participants who made up the sample population.

<div align="center">*Demographics*</div>

Questions 1 and 2 on the teacher and principal surveys asked the respondents to provide information related to school identification and the amount of time spent in their current positions. The 71 middle school principals who submitted completed surveys (7% of the surveys were submitted with no school identification) represented 49 school systems in the state of North Carolina. This sample provided the researcher with data from a wide range of geographic areas in North Carolina. The central region of the state, which does include some of the larger school systems in terms of total student population, had a higher number of multiple responses (more than one principal responding from within a system) when compared to other parts of the state. Of the 71 principal surveys submitted, 36 were from schools categorized as "non growth" while 35 represented "schools of growth" based on the 2005-2006 North Carolina ABCs accountability model.

The 754 teachers who responded to the indicators of instructional program coherence represented 58 middle schools across the state of North Carolina. Approximately 11% of the teachers who participated did not identify their schools. Since the teacher sample consisted of schools taken from the original principal response list (N=71), the same type of widespread geographic representation was discovered with both sample groups. The *SPSS* frequency report displayed an evenly divided number of surveys submitted from "growth" and "non growth" middle schools (29 schools from each category). Of the 754 teacher surveys submitted (including those partially

completed), over 50% (381) represented middle schools that achieved at least expected growth based on the 2005-2006 state accountability model.

The researcher found that 54.9% of the principals who completed the survey had 1-3 years of experience in their current administrative positions. This was significantly higher than the 18.3% of respondents with more than six years on the job. Overall, middle school principals with 1-6 years of experience made up 81.7% of the survey respondents. The frequency report from the teacher responses displayed much more balance in relation to years of experience. 37% of the teachers who responded had spent fewer than four years in their current positions. This compares to 29% of teacher respondents with ten plus years experience in their current positions. The remaining 34% of teachers who responded had 4-9 years of experience.

The researcher, using findings from the frequency report that demonstrated a significant number of principals who responded with 1-3 years of experience in their current positions, explored the possible relationship between years of experience to indicators of instructional program coherence (Tables 4.4 and 4.5). The correlations were divided into two categories, one for principals with 1-6 years of experience (Table 4.4) and the other for principals with seven plus years experience (Table 4.5) in their administrative roles. Although the frequency report demonstrated a pattern of largely inexperienced principals responding to the survey, the data set collected from *SPSS* did not find any statistically significant correlation between years of experience and indicators of instructional program coherence.

Table 4.2. Frequencies for Principal Responses to Indicators of Instructional Program

Coherence

(N=71)

Question	To A Great Extent	Somewhat	Very Little	Not At All
1. Teachers within a grade level purposely link their curriculum to stated learning goals.	85.9	14.1	0.0	0.0
2. Teachers within a grade use common instructional strategies.	47.9	50.7	1.4	0.0
3. Teachers within a grade use common assessment strategies.	38.0	54.9	7.0	0.0
4. Teachers coordinate curriculum and assessments to avoid repetition and to offer students new and more complex aspects of subject matter as they move from grade to grade.	19.7	60.6	18.3	1.4

5. School-sponsored support programs, such as remedial instruction, assemblies, field trips, tutoring, and parent education, are linked to the curriculum, instruction and assessments of the school program.	69.0	28.2	1.4	1.4
6. Professional development for staff supports the implementation of common curriculum, instructional strategies and assessments.	77.5	19.7	1.4	1.4
7. Professional development programs are sustained over time.	38.0	59.2	2.8	0.0
8. The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity and ongoing improvement.	50.7	45.1	2.8	1.4

9. School improvement planning and assessment directly address the school's progress in providing a common, coordinated, and sustained school program.	80.3	16.9	2.8	0.0
10. Curriculum remains reasonably stable over time and thus provides teachers sustained opportunities to learn how to use them well.	56.3	38.0	4.2	1.4
11. Assessments remain reasonably stable over time and thus provide teachers sustained opportunities to learn how to use them well.	29.6	56.3	12.7	1.4
12. Teaching assignments remain stable enough over time that teachers have sustained opportunities to learn how to teach a particular group of students.	47.9	46.5	5.6	0.0
13. Key program leaders and positions remain stable over time so initiatives can be supported and developed.	40.8	46.5	11.3	1.4

Table 4.3. Frequencies for Teacher Responses to Indicators of Instructional Program

Coherence

Question (To what extent do you agree or disagree with each of the following statements?)	Strongly Disagree	Disagree	Agree	Strongly Agree	Total (N)
1. You can see real continuity from one program to another in this school.	3.4	27.0	59.9	9.7	744 (100%)
2. Many special programs come and go in this school.	4.0	48.0	38.3	9.7	742 (100%)
3. Once we start a new program, we follow up to make sure that it's working.	4.2	26.6	59.6	9.7	754 (100%)
4. We have so many different programs in this school that I can't keep track of them all.	9.8	52.6	30.6	7.0	754 (100%)
5. Curriculum, instruction, and learning materials are well coordinated across the different grade levels at this school.	5.3	21.4	59.4	13.4	750 (100%)
6. There is consistency in curriculum, instruction, and learning materials among teachers in the same grade level at this school.	3.5	15.9	60.6	20.1	754 (100%)

7. Most changes introduced at this school have little relation to teachers' and students' real needs and interests.	18.4	57.5	18.4	5.7	754 (100%)
8. Most changes introduced at this school help promote the school's goals for learning.	2.0	12.6	61.8	23.6	754 (100%)

Question	Worse	No Change	Better	Total (N)
9. To what extent have coordination and focus of the school's instructional program changed in the past two years at your school?	12.8	22.3	64.9	754 (100%)

The sample population (N) for the study consisted of 71 principals and 754 teachers from a stratified random sample of traditional grade 6-8 middle schools in North Carolina. The 71 principal responses represented 35.5% of the original target group of 200, which seems to be reflective of the average patterns of response when web surveys are administered in a K-12 setting (Mertler, 2003). Since the principals essentially served as the "gatekeepers" in terms of ensuring delivery of the teacher surveys, multiple e-mail reminders were sent out in hopes of obtaining the highest possible response rate. Of the 71 principals who responded to the initial instructional program coherence survey for administrators, 82% followed up by forwarding the teacher surveys (based on a minimum of one teacher response per school).

All but one of the indicators for instructional program coherence on the teacher survey were scored on a 4-point scale (1=*strongly disagree*, 4=*strongly agree*). The final question was scored on a 3-point scale (1=*worse*, 3=*better*). The principal survey used to evaluate the level of instructional program coherence within a school was also scored on a 4-point scale (1=*to a great extent*, 4=*not at all*).

Transferring the response data from *Qualtrics* to *SPSS*, the researcher ran a frequency report on both the teacher and principal surveys. On eight of the nine indicators used to assess program coherence on the teacher survey, over 60% of respondents reacted positively when asked to evaluate the level of instructional program coherence in their schools. This number reached the 70-80% level on four of the indicators. The exception was Question 2 (see Table 4.3), which addressed the issue of special programs coming and going in the school. On this particular indicator, 48% of the teachers felt that many special programs were not sustained for any length of time.

The frequency report for the principal survey indicated that over 80% of middle school leaders responded in a positive manner to indicators of instructional program coherence. Questions 1 (*linking curriculum to learning goals*), 6 (*professional development*), and 9 (*school improvement planning and assessment*) seemed to elicit the strongest positive responses, as over 75% of principals answered "To a great extent" on these indicators. The questions related to planning, teaching, and assessing within a grade level scored lower than those involving school-wide planning and coordination. Lack of stability was also a factor with principals, as their responses indicated a possible lack of confidence in maintaining programs, initiatives, assessment strategies, teaching assignments, and key program positions for a sustained period of time.

Table 4.4. Correlations Between Years of Experience (1-6) and Principal Responses to

Indicators of Instructional Program Coherence (N=58)

Question	Correlation to Years of Experience (1-6)
1. Teachers within a grade level purposely link their curriculum to stated learning goals.	-0.027
2. Teachers within a grade use common instructional strategies.	-0.056
3. Teachers within a grade use common assessment strategies.	0.241
4. Teachers coordinate curriculum and assessments to avoid repetition and to offer students new and more complex aspects of subject matter as they move from grade to grade.	0.001
5. School-sponsored support programs, such as remedial instruction, assemblies, field trips, tutoring, and parent education, are linked to the curriculum, instruction and assessments of the school program.	0.135
6. Professional development for staff supports the implementation of common curriculum, instructional strategies and assessments.	0.027
7. Professional development programs are sustained over time.	-0.053
8. The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity and ongoing improvement.	0.068
9. School improvement planning and assessment directly address the school's progress in providing a common, coordinated, and sustained school program.	0.140
10. Curriculum remains reasonably stable over time and thus provides teachers sustained opportunities to learn how to use them well.	0.141

11. Assessments remain reasonably stable over time and thus provide teachers sustained opportunities to learn how to use them well.	0.121
12. Teaching assignments remain stable enough over time that teachers have sustained opportunities to learn how to teach a particular group of students.	-0.147
13. Key program leaders and positions remain stable over time so initiatives can be supported and developed.	0.013

Table 4.5. Correlations Between Years of Experience (7-10+) and Principal Responses to

Indicators of Instructional Program Coherence (N=13)

Question	Correlation to Years of Experience (7-10+)
1. Teachers within a grade level purposely link their curriculum to stated learning goals.	.a*
2. Teachers within a grade use common instructional strategies.	-0.228
3. Teachers within a grade use common assessment strategies.	-0.330
4. Teachers coordinate curriculum and assessments to avoid repetition and to offer students new and more complex aspects of subject matter as they move from grade to grade.	-0.369
5. School-sponsored support programs, such as remedial instruction, assemblies, field trips, tutoring, and parent education, are linked to the curriculum, instruction and assessments of the school program.	-0.147
6. Professional development for staff supports the implementation of common curriculum, instructional strategies and assessments.	-0.123
7. Professional development programs are sustained over time.	-0.312
8. The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity and ongoing improvement.	-0.267
9. School improvement planning and assessment directly address the school's progress in providing a common, coordinated, and sustained school program.	-0.116
10. Curriculum remains reasonably stable over time and thus provides teachers sustained opportunities to learn how to use them well.	0.210

11. Assessments remain reasonably stable over time and thus provide teachers sustained opportunities to learn how to use them well.	0.116
12. Teaching assignments remain stable enough over time that teachers have sustained opportunities to learn how to teach a particular group of students.	-0.433
13. Key program leaders and positions remain stable over time so initiatives can be supported and developed.	0.267

* a. Cannot be computed because at least one of the variables is constant.

Section 2

Findings from SPSS Reports

Research Question 1: Did middle schools in North Carolina identified as "Schools of Growth" show a statistically significant correlation to indicators of instructional coherence as identified in research conducted on Chicago elementary schools?

Research Question 2: If the answer to question #1 was statistically significant, were all indicators significant, or were there differentiations within them? If so, in what direction (positive or negative) were the differences?

The researcher used the Pearson bivariate correlation formula found on *SPSS Version 15* to examine whether there was a statistically significant correlation between North Carolina middle schools categorized as "schools of growth" to indicators of instructional program coherence based on the 2005-2006 North Carolina student accountability model (NC ABCs of Public Education). Statistical significance for all independent variables was found at the 0.01 level. Tables 4.6 and 4.7 display the results of the correlational reports based on findings from both the teacher and principal surveys.

The correlational reports from the principal and teacher surveys did not indicate a statistically significant correlation between "schools of growth" and indicators of instructional program coherence as identified in research conducted on Chicago elementary schools. The statistical analysis conducted on *SPSS Version 15* did not substantiate the same type of positive link between student achievement and indicators of instructional program coherence as found in the previous Chicago study.

Research Question 3: If the randomly selected middle schools did show a statistically significant correlation to the indicators of instructional coherence and student achievement, could the current categorization scheme used in North Carolina be supported by the correlations reported?

Based on the findings, or non-findings, from Research Question 1, the researcher was unable to show a statistically significant correlation between indicators of instructional coherence and student achievement. Therefore, the current student accountability model used in North Carolina to categorize middle schools could not be supported by this research. Understanding the obvious importance of instructional program coherence based on previous studies in elementary schools, the findings raise further questions and introduce possible research implications regarding the relationship between instructional coherence and student achievement at the middle school level. Chapter Five will discuss these ideas in greater detail.

Table 4.6. Correlations Between ABC Classification and Principal Responses to

Indicators of Instructional Program Coherence (N=71)

Question	Correlation to ABC Classification
1. Teachers within a grade level purposely link their curriculum to stated learning goals.	-0.156
2. Teachers within a grade use common instructional strategies.	-0.093
3. Teachers within a grade use common assessment strategies.	-0.007
4. Teachers coordinate curriculum and assessments to avoid repetition and to offer students new and more complex aspects of subject matter as they move from grade to grade.	-0.149
5. School-sponsored support programs, such as remedial instruction, assemblies, field trips, tutoring, and parent education, are linked to the curriculum, instruction and assessments of the school program.	-0.112
6. Professional development for staff supports the implementation of common curriculum, instructional strategies and assessments.	-0.019
7. Professional development programs are sustained over time.	0.017
8. The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity and ongoing improvement.	-0.327**
9. School improvement planning and assessment directly address the school's progress in providing a common, coordinated, and sustained school program.	-0.111
10. Curriculum remains reasonably stable over time and thus provides teachers sustained opportunities to learn how to use them well.	-0.207

11. Assessments remain reasonably stable over time and thus provide teachers sustained opportunities to learn how to use them well.	-0.003
12. Teaching assignments remain stable enough over time that teachers have sustained opportunities to learn how to teach a particular group of students.	-0.151
13. Key program leaders and positions remain stable over time so initiatives can be supported and developed.	-0.184

**Statistically significant at the .01 level (two-tailed)

Table 4.7. Correlations Between ABC Classification and Teacher Responses to Indicators

of Instructional Program Coherence

Question	Correlation to ABC Classification
1. You can see real continuity from one program to another in this school.	0.038 (N=662)
2. Many special programs come and go in this school.	-0.033 (N=660)
3. Once we start a new program, we follow up to make sure that it's working.	0.031 (N=663)
4. We have so many different programs in this school that I can't keep track of them all.	0.019 (N=663)
5. Curriculum, instruction, and learning materials are well coordinated across the different grade levels at this school.	0.037 (N=668)
6. There is consistency in curriculum, instruction, and learning materials among teachers in the same grade level at this school.	0.056 (N=666)
7. Most changes introduced at this school have little relation to teachers' and students' real needs and interests.	0.041 (N=668)
8. Most changes introduced at this school help promote the school's goals for learning.	0.075 (N=664)

9. To what extent have coordination and focus of the school's instructional program changed in the past two years at your school?	-0.126** (N=652)

**Statistically significant at the .01 level (two-tailed)

Section 3

Ancillary Findings

The original data were collected using the *Qualtrics* software system before being transferred to *SPSS Version 15*. Tables 4.8 and 4.9 provide the mean, variance, and standard deviation for each of the indicators used on the principal and teacher surveys based on the *Qualtrics* report. The data reflect responses from "growth" and "non growth" middle schools.

Indicators 1 (*Teachers within a grade level purposely link their curriculum to stated learning goals*) and 9 (*School improvement planning and assessment directly addresses the school's progress in providing a common, coordinated, and sustained school program*) had the highest mean scores on the principal survey (1.14 and 1.23 respectively). Indicator 4 had the lowest mean score (2.01), demonstrating some uncertainty on the part of principals in relation to teachers coordinating curriculum and assessments to avoid repetition and to offer students new and more complex aspects of subject matter as they move from grade to grade.

The data from Table 4.9 show that indicator 8 (*Most changes introduced at this school help promote the school's goals for learning*) had the highest positive response

rate among the teachers who submitted surveys on instructional program coherence. Teachers also responded favorably to indicator 7 (reverse scored), suggesting that most of the changes being made in middle schools are related to the teachers' and students' real needs and interests.

Table 4.8. *Qualtrics* Data (Principal Survey)

(N=71)

Indicator	Mean	Variance	Standard Deviation
#1	1.14	0.12	0.35
#2	1.54	0.28	0.53
#3	1.69	0.36	0.60
#4	2.01	0.44	0.67
#5	1.35	0.35	0.59
#6	1.27	0.31	0.56
#7	1.65	0.29	0.54
#8	1.54	0.40	0.63
#9	1.23	0.23	0.48
#10	1.51	0.42	0.65
#11	1.86	0.47	0.68
#12	1.58	0.36	0.60
#13	1.73	0.51	0.72

Table 4.9. *Qualtrics* Data (Teacher Survey)

Indicator	Mean	Variance	Standard Deviation
#1	2.76	0.44	0.67
#2	2.54	0.52	0.72
#3	2.75	0.47	0.68
#4	2.35	0.56	0.75
#5	2.81	0.53	0.73
#6	2.97	0.50	0.71
#7	2.11	0.58	0.76
#8	3.07	0.44	0.66
#9	*	*	*

* *Qualtrics* data not provided for this indicator

Summary

The research questions were addressed through statistical analysis conducted on *SPSS Version 15* software. Using descriptive statistics, the researcher provided frequency reports for the principal and teacher responses to indicators of instructional program coherence. Tables 4.2 and 4.3 display the results based on surveys submitted from 71 principals and 754 teachers from middle schools across the state.

Pearson correlations (*SPSS*) were analyzed to answer Research Questions 1 and 2, exploring the possible link between "schools of growth" (based on the current

categorization scheme used in North Carolina) and indicators of instructional program coherence. The findings, with the exception of one indicator on each survey, did not demonstrate a statistically significant correlation between the variables. The principal responses displayed primarily non-significant negative correlations (11 of the 13 indicators), while the teacher surveys, also non-significant in terms of association between the variables, seemed to move in a slightly positive direction. Since the findings from the correlational study were found not to be statistically significant, the researcher was unable to support the current categorization scheme used as part of the North Carolina ABCs of Public Education (Research Question 3).

The final chapter will provide conclusions and possible implications based on the study. Despite the lack of statistical significance linking instructional coherence to student achievement, the researcher found several areas deserving of further discussion and possible future research.

CHAPTER FIVE

CONCLUSIONS AND IMPLICATIONS

Summary of Purpose

The purpose of this study was to determine whether randomly selected middle

schools in North Carolina categorized as meeting expected or high growth standards on

student achievement exhibited statistically significant differences on indicators of

instructional coherence compared to schools not so designated. Previous research

conducted on Chicago elementary schools presented evidence demonstrating a strong

positive relationship between instructional program coherence and student achievement

(Newmann et al., 2001). Based on the findings from that study, the researcher tested the

hypothesis that a statistically significant positive correlation existed between high levels

of instructional program coherence and student achievement in randomly selected North

Carolina middle schools identified as "schools of growth" based on the North Carolina

ABCs of Public Education. The following three research questions guided the study:

1. Did middle schools in North Carolina identified as "Schools of Growth" show
   a statistically significant correlation to indicators of instructional coherence as
   identified in research conducted on Chicago elementary schools?

2. If the answer to question #1 was statistically significant, were all indicators
   significant, or were there differentiations within them? If so, in what direction
   (positive or negative) were the differences?

3. If the randomly selected middle schools did show a statistically significant correlation to the indicators of instructional coherence and student achievement, could the ABCs of Public Education in be validated, that is, further supported, as a categorization scheme used to identify "growth" and "non growth" middle schools in North Carolina?

Summary of Procedures

Utilizing the *Qualtrics* software program for web-based surveys, a letter of invitation (including informed consent) was sent, via e-mail, to middle school principals representing "growth" and "non growth" student achievement categories based on 2005-2006 North Carolina accountability tests. The stratified random sample of 200 middle schools consisted of 100, or 50%, of the total number of traditional 6-8 middle schools from each of the two ABC student achievement categories. In consultation with experts in the areas of web surveys and data analysis, the researcher determined this target number would provide a statistically valid sample from which to measure levels of coherence. The principals were selected from a stratified random sample consisting of 100 middle schools from each of the two ABC groupings. After multiple follow-up e-mail reminders, the researcher obtained 71 principal surveys, or 35.5%, from an almost evenly divided number of "growth" and "non growth" schools. Once the principal surveys were returned via *Qualtrics*, teacher surveys were then distributed to the 71 school leaders for the purpose of being forwarded to staff members. Fifty-eight of the 71 middle schools, or 82%, submitted a total of 754 teacher surveys for an average of 13 teacher responses per school.

The surveys used for the study were taken from the Newmann et al. (2001) research on instructional program coherence. Teacher surveys were administered to measure perceptions of program coherence within their schools. The principal surveys were sent to school leaders for the purpose of determining the extent, or level, of instructional program coherence in each school. In addition to the indicators of program coherence, the researcher included background questions related to school identification and years of experience. Both surveys were submitted electronically using the *Qualtrics* and *Outlook* software programs.

Responses from the surveys were entered into *SPSS Version 15* for statistical analysis. The guiding research questions were addressed through descriptive statistics and Pearson bivariate correlation reports. Supplemental analysis related to demographic features and frequency of responses was included as part of the *Qualtrics* survey report.

Summary of Major Findings

Analysis revealed a large majority of teachers and principals from both "growth" and "non growth" middle schools who perceive high levels of instructional program coherence in their schools. Tables 4.2 and 4.3 indicate that 93.7% of principals and 70.3% of teachers responded favorably (*To a Great Extent, Somewhat, Strongly Agree, Agree*) to indicators of instructional program coherence. These data suggest that middle grades programs in North Carolina are making efforts to create programs that are guided by a common framework for curriculum, instruction, assessment, and learning.

Although *SPSS V15* frequency reports (Tables 4.2 and 4.3) provided evidence indicating the presence of high levels of instructional program coherence in middle schools as perceived by principals and teachers, the researcher was unable to support the

hypothesis that a statistically significant positive correlation existed between instructional program coherence and student achievement at randomly selected middle schools labeled as "schools of growth" in North Carolina. According to Newmann et al. (2001), principal leadership plays a key role in developing and implementing a common instructional framework that promotes collaboration and a commitment to achieving teaching and learning goals over a sustained period of time. Jackson and Davis (2000) found that significant gains in student achievement will only be seen when all members of the school focus simultaneously on developing the skills necessary for a democratic and collaborative learning environment. While this study did not conclusively demonstrate the absence of any specific practices noted above, the Newmann et al. research indicated that developing higher levels of student achievement can be a challenging task for principals, particularly when political systems resist tight coordination and promote frequent changes at all levels of leadership (Newmann et al.). To extend this line of argument further, a study conducted by Summers & Johnson (1995) at the University of Pennsylvania explained that reform movements in educational leadership can sometimes stress concepts such as stakeholder relationships and staff empowerment as opposed to maintaining the importance of student learning as the primary restructuring goal.

Using the Pearson bivariate correlation formula to determine statistical significance at the 0.01 level, the researcher discovered only one statistically significant negative correlation on each of the two surveys designed to gauge levels of instructional program coherence. Table 4.6 presents the findings from the correlational report representing the possible relationship between ABC classification and principal responses to indicators of instructional program coherence. Of the 13 indicators used to determine

the level of instructional program coherence, only Question 8 *(The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity and ongoing improvement)* proved to be statistically significant when linked to ABC categorization. The Pearson correlation coefficient of -0.327 indicates a statistically significant negative association between the two variables. All but one of the 13 indicators displayed non-significant negative correlations, with Question 7 representing the sole non-significant positive relationship.

The Pearson correlation formula for the teacher survey identified one statistically significant correlation linking "schools of growth" to indicators of instructional program coherence at the 0.01 level (Table 4.7). The final question on the teacher survey (#9: *To what extent have coordination and focus of the school's instructional program changed in the past two years at your school?)* had a Pearson correlation coefficient of -0.126. Though this is considered to be a relatively weak association in terms of strength of the linear relationship, it does represent the only statistically significant link between "schools of growth" and indicators of instructional program coherence based on teacher responses. Seven of the nine indicators for instructional program coherence on the teacher survey displayed non-significant positive correlations.

F.M. Newmann (personal communication, February 4, 2008) indicated that a wide variance across variables led to an increased positive relationship between program coherence and student achievement in Chicago elementary schools. According to Newmann, Chicago schools became more autonomous in the late 1980s and early 1990s, thus allowing the freedom to develop instructional frameworks specific to individual school and student needs. This decentralized approach to learning, combined with

72

Chicago's comprehensive range of curriculum goals, resulted in increased levels of variance in program coherence and student achievement scores. In contrast to the Chicago elementary schools, North Carolina middle schools did not display the same type of statistically significant positive relationship between coherence and student achievement. Since little variance existed between coherence and student achievement in the North Carolina study, there was really no way to identify the existence of any significant statistical relationship between the variables. As Newmann pointed out, you cannot have two constants and expect any type of significant correlation. The more centralized North Carolina educational system does not seem to allow for the same type of variance seen in Chicago, which could explain the non-findings based on *SPSS* reports. In response to the non-significant findings from the North Carolina study, Newmann felt the lack of variance, possibly due to statewide teacher and principal "buy in" of the standards-based accountability system, led to higher (constant) levels of instructional program coherence across all middle schools. He added, "As long as you have consensus on curriculum and the curriculum teaches to the test, then you are only measuring coherence and nothing more. If curriculum causes lack of variance and positive responses [to indicators of coherence], then it must be addressed."

The reduced variance across both independent (program coherence) and dependent (student achievement) variables in the North Carolina study suggested the presence of homogeneous, or clustered, variables. In comparison to the Chicago study where variables were significant and differentiated (Newmann et al., 2001), the North Carolina study contained variables that proved to be insignificant and undifferentiated based on *SPSS* and *Qualtrics* reports (Tables 4.2, 4.3, 4.6, and 4.7). To put it another

way, there is little chance of discovering a relationship between variables when, as the

North Carolina study shows, the variables remain constant. The two constants in the

middle grades study, program coherence (based on responses to indicators) and student

achievement (schools of growth), did not provide enough variation to statistically support

a relationship. Because of this clustering of variables that contributed to reduced

variance, the North Carolina study was essentially limited to measuring levels of program

coherence within schools. To truly determine if the type of statistically significant

correlations found in Chicago also exist in North Carolina middle schools, at least one, if

not both, of the variables would require significantly higher levels of variance. This could

have major implications for student achievement in North Carolina, particularly if

teachers and principals perceive high levels of instructional program coherence to be

synonymous with a commitment to a centralized, systematic, and standards-based

accountability model.

<center>*Possible Rival Hypotheses*</center>

While data from the *SPSS* reports do not support a statistically significant positive

correlation between the variables (Tables 4.6 and 4.7), the results suggest the possible

existence of rival hypotheses. One rival hypothesis could be that increased levels of

instructional program coherence contribute to lower student achievement on standardized

tests. If, as prior studies have suggested, there is a disconnect between what is being

taught in a standards-based classroom and what is being assessed on accountability

measures, then high levels of program coherence could actually cause student

achievement to move in a negative direction. This rival hypothesis becomes more

conceivable when you take into account the differences between the achievement tests

<center>74</center>

administered in Chicago and North Carolina. The North Carolina End-of-Grade Test is a criterion-referenced assessment that measures student mastery of skills compared with a subjective standard of performance. In Chicago, on the other hand, students are administered the Iowa Test of Basic Skills. Interpretation of the Iowa Test of Basic Skills involves comparing individual student scores with results from other students who took the same test. Unlike the North Carolina End-of-Grade Test, the Iowa Test of Basic Skills does not assess students on specific standards-based objectives. Comparing student scores with the performance of a norm group (Chicago) as opposed to a subjective standard of performance (North Carolina) could make a significant difference when attempting to analyze the possible link between student achievement and program coherence. In turn, the variation between measurement tools could also support the high percentage of non-significant findings on the *SPSS* correlation reports, including 12 non-significant negative correlations between indicators of coherence and student achievement on the principal survey (Table 4.6).

Another rival hypothesis that could explain the absence of any statistically significant positive correlation between instructional program coherence and student achievement at the middle school level is that increased levels of program coherence lead to decreased levels of creativity and individuality for teachers within the classroom, particularly when program coherence is confused with maintaining ineffective programs for a sustained period of time (Newmann et al., 2001). Though program stability is considered to be a key component of coherent schools, it can be detrimental when inadequate teaching and learning are allowed to persist over time, thus preventing principals and teachers from recognizing the need for a possible program shift. As the

Chicago study demonstrated, the sustainment of ineffective programs over a three-year period of time can contribute to lower levels of student growth and achievement (Newmann et al.).

When discussing the possible existence of rival hypotheses to explain the lack of any statistically significant positive correlation between coherence and student achievement, the complexities of the schools should also be taken into account. The Chicago study (Newmann et al., 2001) targeted elementary schools, whereas the North Carolina study focused on middle schools. As Chapter Two explains, middle schools are unique and, in many ways, more complex than elementary schools. The organizational structure and increased emphasis on specific subject areas in middle grades could cause teachers to move away from a schoolwide framework in favor of a more specialized, within-subject approach to coherence. In turn, this compartmentalized approach to instruction could lead to decreased levels of program coherence at the middle school level. Also, given the added complexities of a middle school's organizational structure, the parsing out of variables related to student achievement could present many more challenges, especially when compared to a more simplistic elementary model.

Implications for Teachers and Principals

The overwhelmingly positive response on the part of principals to indicators of instructional program coherence (Table 4.2) leads the researcher to believe that middle school leaders are working to develop a schoolwide common instructional framework. This provides reason for optimism, particularly when you take into account the findings from the Newmann et al. (2001) study on Chicago elementary schools. In this study, researchers found that school leaders representing a wide array of styles, from autocratic

76

to democratic, exhibited a willingness to advance a common instructional framework for teaching and learning. The puzzling aspect is that approximately half of all middle schools in the state of North Carolina are not meeting expected growth standards on the ABCs despite the fact that so many principals believe their schools are practicing high levels of instructional program coherence. Possible reasons for this disconnect will be discussed in the final two sections of this chapter.

What is known, based on the Chicago study, is that stronger program coherence is rooted in a principal's commitment to adopt a schoolwide instructional program framework (Newman et al., 2001). Previous research conducted by the Center for Collaborative Education (1998) on effective middle grades leadership indicates that it is essential for principals to participate with teachers in targeted professional development as well as any other informational meetings related to the school's areas of instructional focus. *Turning Points 2000* (Jackson & Davis, p. 158) maintains that a "principal who exerts instructional and curricular leadership by learning alongside teachers is better able to create common ground within the school on what good practice looks like and what the school's goals for improving student performance should be." Though findings from this study do not definitively support the leadership practices discussed above, the data do suggest that principals are able to at least recognize the presence of indicators related to program coherence in their schools.

Middle grades instructors, like principals, responded positively (over 70% as reported in Table 4.3) to indicators of instructional program coherence. While the researcher was not necessarily surprised to observe a high rate of positive responses from principals (Table 4.2), it was somewhat unexpected for teachers to respond with such

positive marks, particularly from those representing "non growth" schools where any type of instructional coherence is often thought to be nonexistent. Though some teachers may have felt pressured to respond favorably due to web survey bias, data collected from surveys nonetheless support significant levels of instructional program coherence as perceived by randomly selected middle school teachers in North Carolina.

As with the principal surveys, the frequency of positive teacher responses (Table 4.3) based on indicators of instructional program coherence did not translate into a statistically significant positive correlation between program coherence and student achievement. While teachers seemed to recognize and affirm their school's commitment to a common instructional framework, the concept of program coherence in and of itself does not appear to lead directly to higher student achievement at the middle school level, at least within the North Carolina context. However, it is still possible that instructional program coherence could lead to, while not containing all of, the variables associated with increased student achievement. The 2001 Newmann et al. study on Chicago elementary schools did not find that program coherence led directly to increased student achievement; rather, the researchers found that high levels of coherence allowed other key supports and resources to operate in a more effective and efficient manner, thus facilitating the advancement of achievement levels. Before any conclusions can be drawn related to student achievement and program coherence in the middle grades, more research and unpacking of variables should be conducted to identify exactly which, if any, indicators of coherence are directly linked to increased levels of achievement.

Demographic Implications

The most glaring demographic pattern based on the findings from the study on instructional program coherence involves the high number of principal respondents with minimal experience. With over 80% of the surveys coming from school leaders with 1-6 years of experience, this means a significant demographic group (10+ years) was left largely underrepresented. This could be attributed to a number of factors, including lack of comfort related to technology, the steady turnover rate among middle school principals, a reluctance on the part of veteran leaders to view the survey as a priority, and even the wording of the question (years of experience in current position as opposed to total number of years in the principalship). Additional demographic factors such as ABC classification and geographic representation did not exhibit significant anomalies in this study. This is consistent with the findings of the Newman et al. (2001) study, as researchers in Chicago did not find demographic variables to be compelling factors when comparing more coherent schools to those with lower levels of coherence. It should be noted, however, that the Chicago study did not attempt to take a comprehensive look at all the factors related to student achievement. Similar to this researcher's study, the focus was primarily on exploring levels of coherence within schools and the influence of coherence on student achievement scores.

Student Achievement/ABC Implications

Research Question 3 addressed whether the current categorization scheme used in North Carolina as part of the ABCs of Public Education could be supported by the findings from the correlational study exploring the possible link between program coherence and student achievement at the middle school level. Based on the findings

from this study, there is not a statistically significant positive correlation between program coherence and ABC classification in the middle grades as evidenced by *SPSS V15* Pearson correlation reports (Tables 4.6 and 4.7). Does this mean that indicators of instructional program coherence do not support the criteria used to recognize student achievement in North Carolina? It would be premature to draw this type of conclusion without looking at other possibilities (rival hypotheses) such as the ones previously discussed in this chapter.

The Newman et al. (2001) study on elementary schools in Chicago over a three-year period did not use a comprehensive model of testing all school-level factors that may impact student achievement. Rather, their findings suggested that instructional program coherence could be used as a key support for developing a schoolwide framework for more effective teaching and learning. The researchers pointed out that program coherence, used in the wrong way, could even cause achievement to decline. In other words, depending on the level of background knowledge, teachers and administrators could perceive an instructional program that pushes basic tasks and a narrow curriculum to be coherent since everyone is on the same page and practicing common instructional methods. Since the concept of program coherence has not been extensively researched at the middle school level, it could be inferred that the lack of a precise definition may have contributed to the relatively high number of positive responses to the surveys. A more finely graded definition may have resulted in greater variance among teacher and principal responses.

It is important to note that the North Carolina accountability model, like any standardized measure of student growth and achievement based on subjective standards,

is "useful only within limits…when used as the sole indicator of quality, it is a poor indicator of teacher quality or for comparing divergent school populations" (Gredler, 1999, p.12). According to a 1997 study (Neill & FairTest Staff), states continue using outdated and disconnected multiple-choice tests that are not properly aligned with state standards. This apparent disconnect between what should be taught and what is being tested could have major ramifications when discussing the relationship between program coherence and student achievement in middle schools. It stands to reason that a school could achieve a high level of instructional program coherence and still not perform well on end-of-year standardized tests. To extend this line of argument, Squires (1996) believes we have placed too much emphasis on accountability tests, leading to false assumptions regarding teaching and learning. Rather than learning more, he feels students have simply become more adept at filling in the bubbles. The lack of alignment between indicators of coherence to North Carolina accountability criteria is another possible explanation for the non-significant findings based on *SPSS V15* correlation reports.

Students from highly coherent elementary schools in Chicago did exhibit higher achievement scores; but, as discussed under the *Possible Rival Hypotheses* section, the Iowa Test of Basic Skills is a norm-referenced test that does not assess student mastery of specific skills or concepts. So, in a sense, one is comparing apples and oranges when analyzing results from the North Carolina End-of-Grade Tests and the Iowa Test of Basic Skills administered in Chicago elementary schools. The students in Chicago were assessed on their general knowledge of a wide range of concepts across content areas. Based on the operational definition of instructional program coherence as provided by

Newmann et al. (2001), the Iowa Test of Basic Skills would seem to be a more authentic

assessment for coherence since it measures a student's ability to perform well in several

interrelated fields. Based on the study of North Carolina middle schools, the concept of

program coherence, which includes the development of a set of interrelated programs

guided by a common framework for teaching and learning, may not lend itself to the type

of narrow and subjective assessments utilized by the ABCs of Public Education.

Implications for Web-based Research in Public Schools

According to Mertler (2003), the advantages of web-based surveys include a

shorter time frame for collecting responses as well as savings related to cost and time (the

issue of higher response rates is still being debated). Disadvantages may include

computer access to the surveys, lack of knowledge and familiarity with technology, the

potential to identify respondents, and browser compatibility issues. It has also been

suggested that web surveys be used primarily for "in-house" groups (Shannon, Johnson,

Searcy, Lott, & ERIC Clearinghouse, 2001). Despite the possible limitations attached to

this type of study, the researcher consulted with experts in the field of web-based surveys

and determined it would be the most effective and efficient method of collecting data

from such a large number of middle schools across the state.

The principal response rate of nearly 36% compared favorably to the 33% average

discovered by Matz (1999) in a study comparing web-based surveys to the traditional

paper-and-pencil method (43%). This number could have been significantly higher had

many of the surveys not been labeled as "spam" by the school system e-mail filters. The

response rate for the initial distribution of principal surveys was 7%, which immediately

raised doubts with the researcher as to whether the surveys actually arrived to the

designated e-mail addresses. Upon further investigation, the researcher found that many

school systems (rural and urban) did not recognize the *Qualtrics* software as an

acceptable site (which is interesting given the fact that *Qualtrics* has been used by major

organizations all over the world for the purpose of conducting web-based research).

Fortunately, the researcher was able to utilize *Microsoft Outlook* as a means of

distributing the surveys that were created on the *Qualtrics* website. Once the new

method of delivery was created, the response rate significantly increased.

Though the response rate moved in a positive direction once the delivery method

was adjusted, the researcher received feedback from principals indicating that some

systems were still not allowing respondents to access to the *Qualtrics* survey link. This

was definitely an unforeseen limitation with the study design, and one that must be

considered for future web-based research in the public school setting. In addition to the

difficulties discussed above, Mertler (2003) provided a list of the most common reasons

why educators do not respond to web surveys:

1. Simply didn't want to take the time to respond (48%)

2. Couldn't access the survey due to limitations of technology (20%)

3. The survey was too lengthy (15%)

4. The topic didn't interest me (6%)

5. Couldn't access the survey due to lack of technological expertise (4%)

6. Afraid of the security/confidentiality of responses (4%)

7. Other (3%)

Based on the researcher's experience, including feedback from respondents, the reasons

listed above were also some of the same reasons why principals and teachers failed to

participate in the study looking at indicators of program coherence in middle schools. The exception would be Reason #3, as both principal and teacher surveys were designed to take less than five minutes to complete. The following recommendations are offered for future research involving web-based surveys in the public school setting:

1. Establish accessibility to the survey before sending it out—make sure recipients have a compatible browser. This may require contacting the technology departments from each system.

2. Be sure respondents understand that confidentiality will be maintained. Explain that web surveys, like paper-and-pencil, can be completely anonymous. This may serve to reduce the level of web survey bias.

3. Provide contact information for respondents who may experience technical difficulties while attempting to access the survey. In some cases you may be able to help with minor issues related to instructions, clarification of questions, etc.

4. If you have problems with specific school sites/systems, take a moment to contact those representatives. The technology department may have ways of circumventing the problem.

The verdict is still out regarding the feasibility of web-based surveys in K-12 settings. Because of the limitations faced by researchers in attempting to obtain a truly representative sample, more studies must be carried out in this area before the web-based model will be recognized as a truly valid and reliable methodological instrument in the public education arena.

Implications for Future Research

   To this point, research linking instructional program coherence and student achievement has been limited to the 2001 Newmann et al. work in Chicago. Though the Newmann et al. study was somewhat restricted in terms of student population (elementary schools), assessment measures for achievement (norm-referenced), and school-level variables (focused solely on the influence of program coherence), the findings clearly exhibit the importance of instructional program coherence as a tool for supporting and strengthening key concepts related to teaching and learning. In order to draw more definitive conclusions regarding the link between instructional program coherence and student achievement at the middle school level, it would be beneficial to conduct more long-term studies looking at other variables (both within and beyond the school setting) that may be more closely related to program coherence. This would include unpacking the variables which define coherence, which at this point are vague, to see if they are universal at all levels and in all circumstances. If levels of program coherence are indeed as high as the surveys indicated, then more research must be done to determine how this concept is linked to student achievement in middle schools.

   Just because the researcher's data show no statistically significant correlation between program coherence and student achievement in middle grades does not mean the concept should be dismissed as a possible driving force behind student achievement and sustained school improvement. What it does mean is that conditions did not exist in this study to allow for a statistically significant relationship between the variables. The independent variable, program coherence, showed very little variance based on principal and teacher responses to web surveys (Tables 4.8 and 4.9). This lack of variance,

coupled with similar low variance in student achievement (dependent variable), essentially eliminated any possibility of the researcher finding a statistical relationship between the two variables.

Conclusions

Rather than continue to reward middle schools for raising scores, states should break down the barriers to coherence and provide school leaders with opportunities to develop programs for students and staff that promote a common instructional framework unique to each school's needs (Newman et al., 2001). This study provides evidence pointing to the existence of moderate to high levels of instructional program coherence in North Carolina middle schools as defined in the Chicago study by Newmann. The absence of any statistically significant positive correlation between program coherence to "schools of growth" in this study may be the result of:

1. The lack of a definitive set of descriptors which comprise coherence that is universally applicable at all levels; the absence of a precise operational definition may have contributed to the non-findings in the NC study;

2. A difference in the way variables may be clustered or grouped in different instructional or program contexts and by levels;

3. Differences in test sensitivity to measures of coherence as globally defined both in Chicago and North Carolina; and/or

4. A faulty state accountability system that, by many accounts, seems to fall short of making a connection with standards-based classrooms that are guided by a common framework for curriculum, instruction, assessment, and learning;

5. A lack of variance between the independent (program coherence) and dependent (student achievement) variables; researchers in the Chicago study used a mixed methods approach for the purpose of defining and rating levels of coherence in each school; this may have led to a wider variance and, in turn, a more statistically significant relationship between the variables.

The first, and only, major study involving instructional program coherence centered on elementary schools in Chicago (Newman et al., 2001). Researchers who conducted the study stressed that findings were limited to elementary schools, noting that coherence may take on an entirely different look in middle and secondary schools where within-subject coherence is often the principal focus. This researcher's study, based on the findings and recommendations of the Chicago study, did not produce the same type of positive link between coherence and student achievement. However, the significant number of positive responses by middle grades principals and teachers to indicators of instructional program coherence offers much promise for additional research exploring the possible benefits of working together to create a common instructional framework that guides teaching and learning throughout the school. Listed below are concluding recommendations as to what researchers can now do with the concept of instructional program coherence:

1. Conduct additional studies similar to this in order to parse out the variables (within and outside the school) related to program coherence and student achievement for the purpose of determining if there are differences, as well as possible significant relationships, by grade levels;

2. Analyze multiple forms of achievement measures (norm- and criterion-referenced) to further explore the possible influence of program coherence on student growth and achievement at all levels;

3. Identify any obstacles that may prevent schools from achieving high levels of program coherence; this could include a more operational definition of instructional program coherence that would serve to allow principals and teachers to further de-construct the term as it applies to their own school setting;

4. Determine the types of key supports for school improvement (particularly at the middle school level where this can be more complex) that are most closely linked to program coherence;

5. Provide a one-to-one relationship between each survey indicator and the construct of instructional program coherence in order to better clarify the concept as it relates to the educational setting

Understanding the high stakes involved with accountability and student achievement, further investigate whether instructional program coherence can be developed and strengthened in a political system that promotes a narrow and often inflexible standards-based curriculum.

APPENDIX A

Teacher Survey on Perceptions of Program Coherence
(Newmann et al., 2001)

The teacher survey items (9) listed below will be sent via e-mail using the Qualtrics software.

Teachers' Perceptions of School Program Coherence: To what extent do you agree or disagree with each of the following statements (strongly disagree, disagree, agree, strongly agree)?

1. You can see real program continuity from one program to another in this school.

2. Many special programs come and go in this school.

3. Once we start a new program, we follow up to make sure that it's working.

4. We have so many different programs in this school that I can't keep track of them all.

5. Curriculum, instruction, and learning materials are well coordinated across the different grade levels at this school.

6. There is consistency in curriculum, instruction, and learning materials among teachers in the same grade level at this school.

7. Most changes introduced at this school have little relation to teachers' and students' real needs and interests.

8. Most changes introduced at this school help promote the school's goals for learning.

Please respond to the final question below regarding your school's instructional program.

9. To what extent have coordination and focus of the school's instructional program changed in the past two years at your school (worse, no change, better)?

APPENDIX B

Principal Survey on Indicators of Instructional Program Coherence
(Newmann et al., 2001)

The principal survey items (13) listed below will be sent via e-mail using the Qualtrics software.

Principal Survey for Indicators of Instructional Program Coherence: Rate your school's level of instructional coherence based on the indicators listed below (to a great extent, somewhat, very little, not at all).

1. Teachers within a grade level purposely link their curriculum to stated learning goals.

2. Teachers within a grade use common instructional strategies.

3. Teachers within a grade use common assessment strategies.

4. Teachers coordinate curriculum and assessments to avoid repetition and to offer students new and more complex aspects of subject matter as they move from grade to grade.

5. School sponsored support programs, such as remedial instruction, assemblies, field trips, tutoring, and parent education, are linked to the curriculum, instruction, and assessments of the school program.

6. Professional development for staff supports the implementation of common curriculum, instructional strategies and assessments.

7. Professional development programs are sustained over time.

8. The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity and ongoing improvement.

9. School improvement planning and assessment directly addresses the school's progress in providing a common, coordinated, and sustained school program.

10. Curriculum remains reasonably stable over time and thus provides teachers sustained opportunities to learn how to teach it well.

11. Assessments remain reasonably stable over time and thus provide teachers sustained opportunities to learn how to use them well.

12. Teaching assignments remain stable enough over time that teachers have sustained opportunities to learn how to teach a particular group of students.

13. Key program leaders and positions remain stable over time so initiatives can be supported and developed.

Informed consent for distribution of web surveys will be sent via e-mail to individual principals (included with initial principal survey). When a completed principal survey is returned, this will provide consent for the follow-up teacher survey.

A Web Survey Investigating Instructional Program Coherence in North Carolina Middle Schools

August 16, 2007

Dear Middle School Principals:

As middle schools leaders across the state continue to search for new ways to meet the increasing demands of state and federal accountability measures, research is beginning to explore the importance of developing a school improvement framework that incorporates the concept of instructional program coherence. If you are not familiar with instructional program coherence, it is considered to be a set of interrelated programs for students and staff that are guided by a common framework for curriculum, instruction, assessment, and learning climate (Newmann et al., 2001). As a former middle grades principal and current researcher interested in learning how we can better meet the learning needs of young adolescents, I am turning to you, the instructional leaders, for assistance with a study on the possible link between instructional program coherence and student achievement at the middle school level.

To participate in the study you would complete the attached principal web survey composed of items designed to evaluate the level of instructional program coherence within your school. This survey is brief and should take no longer than 5-10 minutes to complete. Once you have submitted the principal survey, a separate staff survey will be sent to your school (via schoolwide e-mail) for the purpose of determining teacher perceptions of program coherence among staff members. As with the principal survey, the teacher version is brief and will only take a few moments to complete. Once submitted, the results from both the principal and teacher surveys will be sent back to the researcher anonymously via Qualtrics software (see subject protection disclaimer on Qualtrics software on the next page).

Again, your participation is voluntary and all surveys will be kept anonymous. All data obtained in this study will be reported as school level group data. No individual school or staff member will be identified in this study. The only persons who will have access to these data are the investigators named on this letter.

Because we want to encourage the participation of as many middle schools as possible, we will be sending you a reminder e-mail approximately 10 days after you receive this initial consent letter and attached survey. You may contact us with any questions at (336) 841-9224 or by email (djohnson@highpoint.edu;fenglish@email.unc.edu).
Thank you for considering participation in this study. Though the surveys are voluntary, it is imperative for school leaders and teachers to voice opinions regarding the direction of teaching and learning in our schools. As mentioned above, middle schools are close to my heart and I truly wish to make a difference for those involved in shaping the future of our young adolescents.

Sincerely,

Dustin N. Johnson, Researcher
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All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

The Qualtrics system used to create the surveys maintains data behind a firewall and all data are accessed only by the owner of the survey who must provide password and user id. All pieces of data are keyed to that owner identification and cannot be accessed by anyone other than the owner or, by the owner's request, technical assistance staff. Technical assistance staff includes server administrators at Qualtrics who will respond to hardware or software failures, or Teresa Edwards, the UNC administrator for the Qualtrics Software Agreement. Ms. Edwards has completed Human Subjects Research certification at UNC-CH, and will only access survey data at the account owner's request. The Qualtrics system has been used by government agencies, hundreds of universities and in many dissertations involving human subjects and even disadvantaged and at risk populations, including government sponsored studies collecting data about physical and dependency abuse for adults and children. These are extremely confidential studies that have passed the highest level of scrutiny from human subjects committees.

Newmann, F., Smith, B., Allensworth, E., & Bryk, A. (2001, January 1). Instructional program coherence: What it is and why it should guide school improvement policy. *Educational Evaluation and Policy Analysis, 23*(4), 297.

APPENDIX D (Teacher Information Letter)

A Web Survey Investigating Instructional Program Coherence in North Carolina Middle Schools

September 14, 2007

Dear Middle School Teachers:

As middle schools across the state continue to search for new ways to meet the increasing demands of state and federal accountability measures, research is beginning to explore the importance of developing a school improvement framework that incorporates the concept of instructional program coherence. Instructional program coherence is defined as a set of interrelated programs for students and staff that are guided by a common framework for curriculum, instruction, assessment, and learning climate (Newmann et al., 2001). As a graduate student at UNC-Chapel Hill and former middle grades principal, I am interested in learning how we can better meet the learning needs of young adolescents. Therefore, I am turning to you, the classroom teacher, for assistance with a research study on the possible link between instructional program coherence and student achievement at the middle school level.

To participate in the study you would complete the attached teacher web survey composed of items designed to evaluate the level of instructional program coherence within your school. This survey is brief and should take no longer than 5-10 minutes to complete. Once submitted, the results from the teacher surveys will be sent back to the researcher anonymously via Qualtrics software (see subject protection disclaimer on Qualtrics software on the next page).

Again, your participation is voluntary and all surveys will be kept anonymous. All data obtained in this study will be reported as school level group data. No individual school or staff member will be identified in this study. The only persons who will have access to these data are the investigators named on this letter. All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email at IRB_subjects@unc.edu (refer to study number 07-1523).

Because we want to encourage the participation of as many middle schools as possible, we will be sending you a reminder e-mail approximately 10 days after you receive this initial information letter and survey link. You may contact us with any questions at (336) 841-9450 or by email at djohnson@highpoint.edu. The faculty advisor for this research study, Dr. Fenwick English, may be reached at (919) 843-4572 or fenglish@email.unc.edu.

Thank you for considering participation in this study. Though the surveys are voluntary, it is imperative for school leaders and teachers to voice opinions regarding the direction of teaching and learning in our schools. As mentioned above, middle schools are close to my heart and I truly wish to make a difference for those involved in shaping the future of our young adolescents.

Sincerely,

Dustin N. Johnson, Researcher
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Disclaimer

The Qualtrics system used to create the surveys maintains data behind a firewall and all data are accessed only by the owner of the survey who must provide password and user id. All pieces of data are keyed to that owner identification and cannot be accessed by anyone other than the owner or, by the owner's request, technical assistance staff. Technical assistance staff includes server administrators at Qualtrics who will respond to hardware or software failures, or Teresa Edwards, the UNC administrator for the Qualtrics Software Agreement. Ms. Edwards has completed Human Subjects Research certification at UNC-CH, and will only access survey data at the account owner's request. The Qualtrics system has been used by government agencies, hundreds of universities and in many dissertations involving human subjects and even disadvantaged and at risk populations, including government sponsored studies collecting data about physical and dependency abuse for adults and children. These are extremely confidential studies that have passed the highest level of scrutiny from human subjects committees.

Newmann, F., Smith, B., Allensworth, E., & Bryk, A. (2001, January 1). Instructional program coherence: What it is and why it should guide school improvement policy. *Educational Evaluation and Policy Analysis, 23*(4), 297.

APPENDIX E

(**E-mail Correspondence: Study #07-1523**)

Email #1: Follow-Up Teacher Survey (will be sent to principals who submit completed surveys)

Dear Middle School Principals,

I would like to sincerely thank you for taking the time to complete the principal survey related to instructional program coherence in the middle grades. Your feedback is an invaluable part of the research process as we continue to look for ways to increase the level of teaching and learning for young adolescents.

As mentioned in the previous e-mail, I have attached a link (see below) for the teacher survey on instructional program coherence. Please forward this link to all staff members in your school. As with the principal survey, participation is voluntary and all responses will be submitted anonymously in order to protect the confidentiality of the subjects involved. Additional information regarding the security and privacy of the participants will be included as part of the teacher survey link.

Thank you for your time and consideration.

Sincerely,

Dustin N. Johnson
(*TEACHER SURVEY LINK WITH TEACHER INFORMATION LETTER ATTACHED HERE)

E-mail #2: First Reminder to Principals (ten days after initial e-mail)

Dear Middle School Principals,

In accordance with the principal information letter sent ten days ago, I am sending this e-mail as a reminder of the web survey investigating instructional program coherence in North Carolina middle schools. As a former middle grades principal, I understand how busy you must be at this point in the school year; however, this survey will only take a few moments of your time and could provide valuable data related to middle grades instruction and student achievement. Once you have completed the principal survey, a follow-up teacher survey will be sent as a link to be forwarded to your staff. The teacher survey, much like the principal version, is brief and will only take 5-10 minutes to complete.

Again, thank you for your time and consideration.

Sincerely,

Dustin N. Johnson

Please click on the link below to participate in this brief web survey:
(**PRINCIPAL SURVEY LINK ATTACHED HERE)

E-mail #3: Second Reminder (ten days after first reminder)

Dear Middle School Principals,

In accordance with the principal information letter sent three weeks ago, I am sending this e-mail as a reminder of the web survey investigating instructional program coherence in North Carolina middle schools. This survey will only take a few moments of your time and could provide valuable information related to effective teaching and learning in the middle grades. Once you have completed the principal survey, a follow-up teacher survey will be sent as a link to be forwarded to your staff. As with the principal version, the teacher survey is very brief and will only require 5-10 minutes of your time to complete.

Thank you for your time and consideration.

Sincerely,

Dustin N. Johnson

Please click on the link below to participate in this brief web survey:
(**PRINCIPAL SURVEY LINK ATTACHED HERE)

E-mail #4: Final Reminder (one week after second reminder)

Dear Middle School Principals,

I am sending this final e-mail request in hopes that you will take a few moments to complete a brief survey designed to investigate instructional program coherence at the middle school level. Your participation is essential as we continue to search for new ways to improve teaching and learning for young adolescents. Once you submit a completed survey by clicking on the link below, a separate teacher survey will be sent (also as a link) to be forwarded to staff members.

Just 5-10 minutes of your time could make a significant impact on this research study. Thank you in advance for your time and consideration.

Sincerely,

Dustin N. Johnson
(**PRINCIPAL SURVEY LINK ATTACHED HERE)

References

Anfara, V., Jr., Brown, K., Mills, R., Hartman, K., & Mahar, R. (2000, April 1). Middle Level Leadership for the 21st Century: Principals' Views on Essential Skills and Knowledge; Implications for Successful Preparation. Retrieved September 19, 2007, from ERIC database.

Anfara, V., Jr., & Lipka, R. (2003). Relating the middle school concept to student achievement. *Middle School Journal, 35*(1), 24-32.

Backes, J., Ralston, A., & Ingwalson, G. (1999). Middle level reform: The impact on student achievement. *Research in Middle Level Education Quarterly, 22*(3), 43-57.

Bloom, B. (Ed.). (1956). *Taxonomy of educational objectives: The classification of educational goals: Handbook I: Cognitive domain.* New York: David McKay Company, Inc.

Brown, K., Roney, K., & Anfara, V., Jr. (2003). Organizational health directly influences student performance at the middle level. *Middle School Journal, 34*(5), 5-15.

Bryk, A., Lee, V., & Holland, P. (1993). *Catholic schools and the common good.* Cambridge, MA: Harvard University Press.

Center for Collaborative Education. (December 3, 1998). *Turning Points Design Model* (Draft). Boston, MA: Author.

Cohen, D., & Ball, D. (1996). Reform by the book: What is- or might be- the role of curriculum materials in teacher learning and instructional reform? *Educational Researcher 25*(9), 6-8.

Cohen, D., & Ball, D. (1999). *Instruction, capacity, and improvement.* (Consortium for Policy Research in Education Research Report No. RR-043). Philadelphia: University of Pennsylvania.

Coleman, J., Hoffer, T., & Kilgore, S. (1982). *High school achievement: Public, Catholic, and private schools compared.* New York: Basic Books.

Collins, J. C. (2001). *Good to great: Why some companies make the leap—and others don't.* New York: HarperBusiness.

Davis, D., & Thompson, S. (2004). Creating high-performing middle schools in segregated settings: 50 years after Brown. *Middle School Journal, 36*(2), 4-12.

Dimmock, C., & Walker, A. (2004). A new approach to strategic leadership: Leanring-centredness, conectivity and cultural context in school design. *School Leadership and Management*, *24*(1), 39-56.

Downey, C., Steffy, B., English, F., Frase, L., & Poston, Jr., W. (2004). *The three-minute classroom walk-through.* Thousand Oaks, CA: Corwin.

English, F., & Steffy, B. (2001). *Deep curriculum alignment: Creating a level playing field for all children on high-stakes tests of educational accountability*. Lanham, MD: Scarecrow Press.

Erb, T. (2006, January 1). Middle school models are working in many grade configurations to boost student performance. *American Secondary Education*, *34*(3), 3. Retrieved September 14, 2007, from ERIC database.

Erb, T., & Stevenson, C. (1999). Fostering growth inducing environments for student success. *Middle School Journal, 30*(4), 63-67.

Felner, R., Jackson, A., Kasak, D., Mulhall, P., Brand, S., & Flowers, N. (1997). The impact of school reform for the middle years: A longitudinal study of a network engaged in Turning Points-based comprehensive school transformation. *Phi Delta Kappan, 79*, 528-532, 541-550.

Flowers, H., Mertens, S., & Mulhall, P. (1999). The impact of teaming; Five research-based outcomes. *Middle School Journal, 31*(2), 57-60.

Flowers, H., Mertens, S., & Mulhall, P. (2000). What makes interdisciplinary teams effective? *Middle School Journal, 331*(4), 53-56.

Flowers, H., Mertens, S., & Mulhall, P. (2003). Lessons learned from over a decade of middle grades research. *Middle School Journal, 35*(2), 55-59.

George, P., & Grebing, W. (1992). Seven essential skills of middle level leadership. *Schools in the Middle, 1*(4), 3–11.

Goldstein, J., & Behuniak, P. (2005). Growth models in action: Selected case studies. *Practical Assessment Research & Evaluation*, *10*(11).

Gredler, M. (1999). *Classroom assessment and learning*. New York: Longman.

Hill, P. & Celio, M. (1998). *Fixing urban schools*. Washington, DC: Brookings Institution Press.

Howley, C., Strange, M., & Bickel, R. (2000, December). Research about school size and school performance in impoverished communities. [ERIC Digest]. Retrieved November 11, 2007, from the ERIC Clearinghouse on Rural Education and Small Schools Web site: http://www.ael.org/eric/digests/edorc0010.htm

Huberman, M., & Miles, M. (1984). *Innovation up close*. New York: Plenum.

Jackson, A. & Davis, G. (2000). *Turning Points 2000*. New York: Teachers College Press.

Johnson, J., Howley, C., & Howley, A. (2002). Size, excellence, and equity: A report on Arkansas schools and districts. Athens, OH: Educational Studies Department, Ohio University.

Keung Hui, T. (2004, December 20). Board won't alter scores: Middle school teachers won't get bonuses although tests were scored incorrectly. *The News and Observer*, p. B1.

Kilcrease, A., & Jones, L. (1995, November 1). *Principals' perceptions of the functions and characteristics of middle schools in Mississippi.* Paper presented at the Annual Meeting of the Mid-South Educational Research Association. November 8-10. Biloxi, MS.

Ladd, H., & Walsh, R., (2002). Implementing value-added measures of school effectiveness: Getting the incentives right. *Economics of Education Review*, *21*, p. 1-17.

LEARN NC (2007). ABCs accountability model. Retrieved November 2, 2007, from http://www.learnnc.org.

Lee, V. E., & Loeb, S. (2000). School size in Chicago elementary schools: Effects on teachers' attitudes and students' achievement. *American Educational Research Journal, 37,* 3-31.

Levin, B. (2000). Conceptualizing the process of education reform from an international perspective. Paper presented at the American Educational Research Association, New Orleans.

Lipsitz, J., Mizell, M., Jackson, A., & Austin, L. (1997). Speaking with one voice: A manifesto for middle-grades reform. *Phi Delta Kappan*, *78*, 533-540.

Matz, C. (1999, November 1). Administration of Web versus Paper Surveys: Mode Effects and Response Rates. Retrieved Novemeber 4, 2007, from ERIC database.

McNeil, P. (2005, April). The uphill struggle to reform Denver high schools. *The Term Paper: News & Analysis on Urban School Reform, 4*(2), 1-5.

Mertens, S., & Flowers, N. (2003). Middle school practices improve student achievement in high poverty schools. *Middle School Journal, 35*(1), 33-45.

Mertler, Craig A. (2003). Patterns of response and nonresponse from teachers to Traditional and web surveys. *Practical Assessment, Research & Evaluation, 8*(22). Retrieved August 13, 2007, from http://PAREonline.net/getvn.asp?v=8&n=22.

Mitchell, R. (1996). *Front-end alignment: Using standards to steer educational change: A manual for developing standards*. Washington, DC: The Education Trust.

National Association of Elementary School Principals. (2001). *Leading learning communities: NAESP standards for what principals should know and be able to do.* Alexandria, VA: Author.

National Education Goals Panel. (1993). *Promises to keep: Creating high standards for American students: Report on the review of education standards from the goals 3 and 4 technical planning group to the National Education Goals Panel.* Washington, DC: Author.

Neill, M., & FairTest Staff. (1997). *Testing our children: A report card on state assessment systems.* Cambridge, MA: The National Center for Fair and Open Testing.

Newmann, F. (1993). Beyond common sense in educational restructuring: The issues of content and linkage. *Educational Researcher, 22*(2), 4-22.

Newmann, F. (1996). *Center on Organization and Restructuring of Schools activities and accomplishments, 1990-1996*. [Madison, WI]: Wisconsin Center for Education Research, School of Education, University of Wisconsin-Madison.

Newmann, F., Bryk, A., & Nagaoka, J. (2001). *Improving Chicago's schools. Authentic intellectual work and standardized tests: Conflict or coexistence?* Chicago, IL: Consortium on Chicago School Research.

Newmann, F., Smith, B., Allensworth, E., & Bryk, A. (2001, January 1). Instructional program coherence: What it is and why it should guide school improvement policy. *Educational Evaluation and Policy Analysis, 23*(4), 297.

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002). Retrieved July 5, 2007, from http://www.ed.gov/policy/elsec/leg/esea02/107110.pdf.

North Carolina Department of Public Instruction (2007). The ABCs of public education: 2005-06 growth and performance of North Carolina public schools. Retrieved July 10, 2007, from http://ncpublicschools.org/docs/accountability/reporting/ abc/2005-06/execsumm.pdf.

Peterson, P., and Hess, F. (2006) Keeping an eye on state standards: A race to the bottom? *Education Next 6*(3), 28-29.

Picucci, A., Brownson, A., Kahlert, R., & Sobel, A. (2004). Middle school concept helps high-poverty schools become high-performing schools. *Middle School Journal, 36*(1), 4-11.

Raywid, M. (1997-1998). Small schools: A reform that works. *Educational Leadership, 55*(4), 34-39.

Sergiovanni, T. (1994). *Building community in schools*. San Francisco: Jossey-Bass.

Shannon, D., Johnson, T., Searcy, S., Lott, A., & ERIC Clearinghouse on Assessment and Evaluation, C. (2002, July 1). *Survey Professionals Using Electronic Surveys. ERIC Digest*. Retrieved August 13, 2007, from ERIC database.

Squires, S. (1996, March 5). Are all those tests really necessary? *The Washington Post*, p. Z7.

Smith, J., Lee, V., & Newmann, F. (2001). *Instruction and Achievement in Chicago Elementary Schools. Improving Chicago's Schools.* Chicago, IL: Consortium on Chicago School Research. Retrieved June 8, 2007, from ERIC database.

Smith, J., Smith, B., & Bryk, A. (1998). *Setting the pace: Opportunities to learn in Chicago's elementary schools.* Chicago: Consortium on Chicago School Research.

Spense, B. (2000). *Small schools: Why they provide the best education for low-income children.* Charleston, WV: Challenge West Virginia.

Stevenson, C., & Erb, T. (1998). How implementing *Turning Points* improves student outcomes. *Middle School Journal, 30*(1), 49-52.

Summers, A. & Johnson, A. (1995). Doubts about decentralized decisions: Research questions positive correlation between site-based management and student outcomes. *The School Administrator, 52*(3), 24-32.

Supovitz, J., & Christman, J. (2005). Small learning communities that actually learn: Lessons for school leaders. *Phi Delta Kappan, 86*, 649-651.

Supovitz, J. & Poglinco, S. (2001) *Instructional Leadership in Standards-Based Reform.* Philadelphia: Consortium for Policy Research in Education.

Trimble, S. (2002). Common elements of high performing, high poverty middle schools. *Middle School Journal, 33*(4), 7-16.

Tucker, M., & Codding, J. (1998). *Standards for our schools: How to set them, measure them, and reach them*. San Francisco: Jossey-Bass.

Tucker, M., & Codding, J. (1999). Education and the demands of democracy in the next millennium. *Preparing our schools for the 21st century* (1999 ASCD Yearbook) (pp. 24-44). Alexandria, VA: Association for Supervision and Curriculum Development.

Tung, R. & Feldman, J. (2001, January). *Promoting whole school reform: A closer look at the role of external facilitators.* Paper presented at the International Congress for School Effectiveness and Improvement (ICSEI), Toronto, Canada.

Waggoner, M. (2005, January). NC panel debates raising standards for end-of-grade test. Retrieved January 3, 2008, from http://pareonline.net/pdf/v10n11.pdf.

Warren, L., & Muth, K. (1995). The impact of common planning time on middle grade students and teachers. *Research in Middle Level Education, 18*(3), 41-58.

Wasley, P., Fine, M., Gladden, M., Holland, N., King, S., Mosak, E., & Powell, L. (2000). *Small schools: Great strides*. New York: Blank Street School of Education.

Whittaker, T., & Valentine, J. (1993). How do you rate? *Schools in the Middle, 3*, 21-24.

Williamson, R. (1991). Leadership at the middle level. In J. Capelluti & D. Stokes (Ed.). *Middle level education: Programs, policies, and practices* (pp. 36-41). Alexandria, VA: National Association of Secondary School Principals.