BELIEFS ABOUT HUMAN POTENTIAL, LEADERSHIP BEHAVIORS, AND BUILDING GROWTH SCORES OF ELEMENTARY PRINCIPALS IN NEW YORK STATE

A Doctoral Research Project
Presented to
Associate Professor, Ann Myers, Ed.D.
Doctoral Research Committee Chair
Esteves School of Education
The Sage Colleges

In Partial Fulfillment of the
Requirements for the
Degree of Doctor of Education
In Educational Leadership

Kathleen Chaucer

October 30, 2013

BELIEFS ABOUT HUMAN POTENTIAL, LEADERSHIP BEHAVIORS, AND BUILDING GROWTH SCORES OF ELEMENTARY PRINCIPALS IN NEW YORK STATE

We represent to Sage Graduate School that this thesis/dissertation and abstract are the original work of the author and do not infringe on the copyright or other rights of others.

Kathleen Chaucer — Date of Signature

Dr. Ann Myers
Associate Professor
Dissertation Chair — Date of Signature

Abstract

Education reform in the United States has experienced sweeping changes under Race to the Top (RTTT), the cornerstone of the Obama administration's philosophy on education. The Regents Reform Agenda, New York State's operationalization of the requirements of RTTT, includes an accountability model for principal and teacher effectiveness based on the academic growth of students over time. The scores for the first year of the new model were released in the summer of 2012, and the second year's scores were released in August 2013. With such a high emphasis being placed on student growth, districts have been charged to utilize a new measure of success.

A great body of research exists on the impact of leader behaviors on student achievement, including Hallinger and Heck (1998) and Waters, Marzano, and McNulty (2003). However, far less literature provides insight into leaders' impact on student growth over time (Dhuey & Smith, 2012; May, Huff, & Goldring, 2012). The book *Mindset* (Dweck, 2006), which has been used by the New York State Education Department in the implementation of the Regents Reform Agenda, offers a framework by which to gauge leader beliefs regarding human potential. The new education policy priorities in New York State and across the nation have created research opportunities focusing on ways leaders' beliefs and behaviors can influence student growth over time.

One hundred ninety-two elementary school principals participated in this quantitative study examining the relationship between leader beliefs about human growth potential, leadership behaviors in the roles of principals, and the building-wide student growth scores of school building leaders in New York State. Pearson correlations, analyses of variance, and multiple regression analyses were used to examine relationships among the variables in the

study. The results revealed minimal relationships between leader beliefs in human growth potential, leadership behaviors, and building mean student growth scores. Some school related factors were also investigated as to their relationship with building mean student growth scores. Student poverty, as measured by free and reduced lunch rates, emerged as the only variable that demonstrated a significant relationship with the building mean growth scores for the schools in this study. One recommendation for future study is to examine the new accountability model with specific focus on recent adjustments for student poverty level.

Keywords: student growth scores, leader beliefs, leader behaviors, principal effectiveness, Dweck, mindset

Acknowledgements

I would like to acknowledge the many individuals who helped me in my pursuit of this accomplishment. New friends, colleagues, and inspirational mentors were revealed to me along my personal journey and their support and collective efforts helped me to reach this goal.

To my cohort members, I have thoroughly enjoyed our time together and I am grateful for the friendships we have established.

Dr. Ann Myers, I thank you for your guidance and encouragement as I grappled with a topic that "mattered to me and also just plain mattered." Thank you for your personal support, as well as for the example you have set with your own leadership experiences over the course of your career. We are all fortunate to have experienced your wisdom and advisement over the course of our program.

Dr. Raymond O'Connell, words cannot express my gratitude for the countless hours you dedicated to my completion of this project. I believe that your gentle soul and overwhelming knowledge of data have made you an angel on earth for dissertation candidates. I consider myself extremely lucky to have had the experience of working with you and I will not forget the patient and gentle manner by which you guided me through the data analysis portion of my research. Thank you for sharing so much of your time with me.

Dr. Michael Johnson, thank you for the time and expertise you offered as my third reader. Your insight and suggestions are greatly appreciated.

Dr. Janice White, thank you for your engaging discussions in class and for your support over the course of this program.

System level leaders have opportunities to not only influence the students and teachers within their organizations, but also to inspire future system leaders. I was fortunate to have two

individuals who were certainly inspirational as they guided me through this process. Dr. Kathleen Spring, I thank you for serving as my executive coach and for supporting me professionally and personally along my path. I so enjoyed our meetings and chats and I look forward to continuing to learn from you in years to come.

While I learned about system leadership in my coursework, I was fortunate to have a superior model of system leadership at my own workplace. Dr. Joseph Dragone, I thank you for your interest in my professional growth and my pursuit of this degree. Your countless hours reviewing literature and data with me and your insistence that I make this experience meaningful only further solidified the example you set as a system leader. I am a better leader for having worked on your team, and I am a better thinker and learner due to the individual support you have provided me.

I also need to thank my family for their support over the past 27 months. Thank you to my mother and father, Robert and Linda Smith, for your unending support and for instilling in me at an early age the belief that I can do anything that I want. Being the daughter of a kindergarten teacher, and coming from a long line of teachers, I appreciate the importance of kindness, compassion, and child-centered decisions because I learned those things from being in my mom's classroom. Thank you to my little brother, Andrew Smith, for being a true friend and confidant and for joining me in being the second educator in the family to "go to the dark side." I so love that we can learn from one another's leadership experiences.

To my two dear friends, Michele Whitley and Kerri Canzone, thank you for being more like sisters than friends and for your never ending support.

To Thomas Giglio, I thank you for patiently being my "other half" on this expedition and for calmly reminding me, again and again, that we would get through this. I love you very much.

Dedication

I dedicate this project to my son, Samuel, who served as my inspiration to take on and complete this program of study. Sammy, I love you and I wish you a lifetime of wonderful learning experiences!

Table of Contents

List of Tables

Chapter 1: Introduction

"It's time to stop just talking about education reform and start actually doing it. It's time to make education America's national mission" (President Barack Obama, November 4th, 2009).

Race to the Top (RTTT), a national competitive grant program, has reshaped education reform throughout the United States, especially as it relates to the way states compete for funding. The country's education system has experienced sweeping changes under this cornerstone of the Obama administration's philosophy on education. The Regents Reform Agenda, New York State's operationalization of the requirements of RTTT, includes an accountability model for principal and teacher effectiveness based on the academic growth of students over time. In August 2012, New York State school district leaders were notified by New York State Education Commissioner King that a corrective action plan would be established for districts who provided low correlation results between student growth scores and any other measure of teacher and principal effectiveness (J. B. King, Jr., personal communication, August 22, 2012). The intent is that the student growth scores should highly correlate with teacher and principal evaluation ratings deemed *other measures of evaluation*. With such a high emphasis placed on student growth scores, districts are now charged with a new measure of success.

The new education policy priorities in New York State and across the nation have created research opportunities focusing on whether leaders' beliefs and behaviors can influence student growth over time. Given the scope of the new evaluative requirement, it is paramount to examine the relationship between school building leader beliefs, school building leader behaviors, and the building growth scores of school building leaders in New York State.

Purpose Statement

This quantitative study was designed to examine the relationship between school building leader beliefs, school building leader behaviors, and student growth scores for elementary principals in New York State.

Research Questions

The following questions were developed to address the purpose of this research project:

1. What beliefs do school building leaders hold regarding human potential?
2. What behaviors do school building leaders report they demonstrate in the performance of their roles as school building leaders?
3. Is there a relationship between school building leader beliefs and student growth scores?
4. Is there a relationship between school building leader behaviors and student growth scores?
5. Are there specific school related factors (district type, principal longevity, or poverty level) that impact student growth scores?

Definitions of Key Terms

The list below defines terms and definitions that will be used throughout this dissertation.

Growth Model: According to Goldschmidt et al. (2005), "The term growth model generally refers to models of education accountability that measure progress by tracking the achievement scores of the same students from one year to the next with the intent of determining whether or not, on average, the students made progress" (p. 4).

Growth Rating: The growth ratings of highly effective, effective developing, or ineffective were used to describe the principal's performance category based on the overall mean growth

percentile (MGP) for the students in a principal's building (New York State Education Department [NYSED], EngageNY, 2013b).

Growth Score: "Using scoring bands determined by the Commissioner, a growth score of 0–20 points is assigned to each principal based on his or her overall MGP," (NYSED Engage NY, 2012a, p. 7).

Interstate School Leaders Licensure Consortium (ISLLC) Standards: For the purposes of this study, principals' leadership behaviors were quantified in terms of the leadership performances identified in the ISLLC standards. This set of national standards was selected because they were established to not only improve teaching and learning for all children, but also to serve as a model for state educational leadership policies (Council of Chief State School Officers [CCSSO], 2008).

Mindset: According to Dweck (2006), mindset is the way individuals view the world. A fixed mindset is, "believing that your qualities are carved in stone," while a growth mindset is, "based on the belief that your basic qualities are things you can change" (Dweck, 2006, p. 6-7).

Principal: For purposes of this study, this term is used interchangeably with school building leader and leader.

Race to the Top (RTTT): A $4.35 billion federal competitive grant program designed to encourage and reward states to create conditions for education innovation and reform (U.S. Department of Education [USDOE], 2009).

Reform Agenda: New York State's Regents Reform Agenda was passed by the state legislature in May 2010 and was supported by both the Governor and the State's Board of Regents (USDOE, 2012).

Student Growth Percentile (SGP): SGPs were the measure used to indicate academic growth compared to similar students over the course of the two past school years. Principals' growth scores were determined based on the MGP, which is the average of the SGPs in each principal's respective building (NYSED EngageNY, 2012a).

Limitations and Delimitations

A delimitation of this study was the design component that excluded principals from New York City. This choice was made by the researcher due to differences in governance structure and subsequent growth score assignments. Another delimitation of the study was that only elementary principals were surveyed. Although middle school principals in New York State also received growth scores, they were excluded from this study because of the dissimilar student-to-teacher linkages, building schedules, and school framework.

Limitations of the study included response rate and sample size, as only 192 of the approximately 1,500 existing elementary principals in New York State participated in the study, resulting in a response rate of approximately 12.5%. Another limitation of the study was the fact that growth scores were self-reported by the principals in the study. Additionally, the options in the survey instrument for reporting growth scores fell on a scale of 1-20, when, in fact, the possibility did exist of receiving a zero as a building growth score. A total of 7% of all elementary and middle school principals in New York State received a score of 0-2, thus indicating that the total number of principals in elementary schools in New York State minus New York City who received a growth score of zero was minimal.

Significance of Study

The impact that leader behaviors and beliefs have on student achievement is a topic that has been studied in great detail. Numerous researchers have examined specific behaviors school

leaders can take to ultimately improve student learning outcomes. The significance of this study rests in a number of dimensions. First, the timeliness of the study was a key factor in its importance. The first full year of New York State's Regents Reform Agenda had been completed and the second year of implementation was pending, including awaiting the release of the second year's growth scores, at the time research was conducted. As school leaders were in the midst of the reform and were waiting for their second year of evaluative scores, they were more eager than ever to improve learning outcomes in their respective buildings. Additionally, although the impact that leader behaviors and beliefs have on student achievement was a widely researched topic, little research existed on the impact that leader behaviors and beliefs had on student growth. The Reform Agenda calls for evaluative measures of student performance based on their growth over time, and therefore, it is critical that the concept of growth and the impact school leaders can have on student learning over time be examined.

Finally, the concept of attitude towards growth and educators' frame of mind has been brought forward as the various demands of the Reform Agenda have taken hold. The book *Mindset* (Dweck, 2006) was being utilized by the New York State Education Department (NYSED) as a tool in the implementation of the Reform Agenda's components. Specifically, the department offered professional development sessions studying the book and posted them on their website, engageNY.com. Additionally, NYSED included the book in the 2013-2014 rubric, "New York State Metrics and Expectations" (NYSED Engage NY, 2013b). The department recommends that network teams, "Provide ongoing training on Carol Dweck's *Mindset*…and monitor language, culture, attitudes of district and schools" (NYSED EngageNY, 2013b, Culture of safety and development section). Therefore, the use of the *Mindset* book in this research

provides a relevant and applicable lens by which to examine leader beliefs as they relate to student growth scores.

Chapter 2: Literature Review

Introduction

A review of relevant literature provided insight into the foundation of this research, including the interconnectedness between leader beliefs, behaviors, and student growth. This chapter examines current educational reform initiatives, their political connections, and the principal evaluation components of the new reform legislation. The evolution of student accountability in our nation, specifically the concept of measuring student growth, is reviewed. The impact of school leadership on student achievement is discussed as well. Finally, the relationship between leadership behaviors and student growth is studied.

Current Education Reform Initiatives

The American Recovery and Reinvestment Act of 2009 (ARRA) was signed into law in February 2009. This act was intended to stimulate the economy, encourage job creation, and invest in education, and it focused on education reform by encouraging increased effectiveness in a variety of areas of the field. RTTT, the Obama administration's key policy to drive education reform in the United States, championed competition among states as they vied for funding from the federal government resulting from ARRA. The $4.35 billion competitive grant program of RTTT put into motion a roadmap for states to adopt the specific requirements of this national agenda in exchange for the financial support named in the fund (USDOE, 2009).

RTTT identified six priorities aimed at increasing student achievement, including an emphasis on science, technology, engineering, and mathematics (STEM), innovations for improving early learning outcomes, expansion of statewide longitudinal data systems, alignment from early childhood programs through post secondary institutions and including workforce development, and school-level reform. However, the first and most expansive priority of RTTT

was a comprehensive approach to educational reform. To meet this priority in their application, states were required to produce a detailed plan outlining the way they would use the RTTT funds to increase student achievement, decrease achievement gaps, and increase graduation rates (USDOE, 2009).

In New York State, the Board of Regents, the governing body of education policy, operationalized its Regents Reform Agenda through successfully submitting a RTTT application and, therefore, receiving funding to advance education policy in New York State. The state's application included four main components: adoption of the Common Core Standards; completion of a P-20 longitudinal education data system; a struggling school turn around program; and a comprehensive teacher and principal evaluation system based on multiple measures of effectiveness, including student achievement measures, which would comprise 40% of teacher and principal evaluation ratings (NYSED, n.d.).

On May 28th, 2010, New York State Governor Patterson signed section 3012-c to the Education Law. This law outlined a new Annual Professional Performance Review (APPR) system for classroom teachers and building principals. Ratings of effectiveness were outlined based on student growth on state assessments, student achievement on locally selected measures of student achievement, and other measures of effectiveness (King, 2011). Under this new system, principals, along with teachers, were to be evaluated on a 100 point scale each year. The points were distributed as follows: 20 points based on growth from state assessments, 20 points based on locally selected measures of student achievement, and 60 points on other measures of effectiveness, including broad assessment by a supervisor, school improvement and individual goals, and principal contribution to teacher effectiveness.

In August 2012, New York State school district leaders were notified by Commissioner

King that a corrective action plan would be established for districts who provided low correlation results between student growth scores and any other measure of teacher and principal effectiveness (J. B. King, Jr., personal communication, August 22, 2012). The intent was that the student growth scores should highly correlate with teacher and principal evaluation ratings deemed other measures of evaluation. With such a high emphasis being placed on these student growth scores, districts were now charged with a new measure of success. The new teacher and principal evaluation has reshaped the conversation regarding accountability with a strong emphasis on quantifying academic results as a critical measure of principal effectiveness. This shift has forced leaders to consider ways they can have the greatest impact on student growth. Given the scope of this evaluative requirement, it is paramount to examine the relationship between school building leader beliefs, school building leader behaviors, and the building growth scores of school building leaders in New York State.

The Evolution of Student Accountability

Student accountability is a concept that has greatly changed over time and, most recently, has taken on an entirely new role in our nation's educational system. Whereas the No Child Left Behind (NCLB) Act of 2001 required states to report student proficiency on annual test scores, new legislation is requiring vastly different ways by which to measure student learning. The system has moved from narrowly measuring achievement to more broadly looking at student growth over time. There are many ways to measure student learning and a variety of purposes for the use of each.

Accountability Models

In 2010, the RTTT competitive grant competition required states to propose measures of evaluating teachers and principals that included student achievement measures. While general

growth models ask the question, "How much, on average, did students' performance change?" (Blank, 2010, p. 9), other models pose importantly different questions for their uses.

Status models are types of accountability models that examine proficiency levels of students or subgroups of students at one point in time. An example of a status model is NCLB's Adequate Yearly Progress (AYP), where proficiency levels were measured each year on state assessments and compared with set targets. Progress in this model was defined in terms of the percentage of students reaching the proficient level for that particular year and therefore, schools were evaluated on whether or not student groups met or did not meet the goal (Auty et al., 2008).

Another type of accountability model is an improvement model, which according to the Council of Chief State School Officers (CCSSO)' *Implementer's guide to growth models* (Auty et al., 2008), is a type of accountability that measures the performance of different groups of students. For example, this year's third grade scores on a state math assessment may be compared to the performance of last year's third graders on last year's state math assessment. Historically, the *safe harbor* targets of NCLB's AYP have been utilized as improvement models for student accountability reporting.

Growth Models

Growth models, which are currently the most popular accountability models due to their utilization in the recent Reform Agenda legislation, track the achievement scores of the same students from one year to the next. The idea of measuring the growth of student learning is a relatively new concept, and according to Auty et al. (2008), "The literature on growth models for accountability and school improvement is at an early stage of development…and much of the literature is from a few district and state applications of growth models" (p. 1).

According to Goldschmidt et al. (2005):

> The term growth model generally refers to models of education accountability that measure progress by tracking the achievement scores of the same students from one year to the next with the intent of determining whether or not, on average, the students made progress. (p. 4)

While most achievement measures of student learning take into account one snapshot of where students are at a specific point in time, growth models, in contrast, attempt to indicate student progress over time. Therefore, students' progress can be viewed as a comparison of students' estimated improvements in learning to set state or district targets (Blank, 2010).

Growth models can be used as a tool by which to measure student learning for a variety of reasons. First and foremost, growth models quite simply provide schools with an indication of student learning gains that may not otherwise be identified in status models (Blank, 2010). Instead of providing a snapshot in time reporting of students who either achieved or failed to achieve a set proficiency target, growth models allow for the identification of learning gains individual students have made from year to year in relation to other students of similar backgrounds and similar prior achievement. Through monitoring student improvement, educators can quantify gains made as a result of their instruction.

Other reasons for using growth models are found in the instructional implications they can offer (Auty et al., 2008). Growth models can provide information to schools on program evaluation and possible subsequent adjustments to instructional programs. Additionally, measuring growth for the use of classroom instruction assessment, via formative use, can provide teachers with powerful information on the extent to which their instruction provided thorough learning opportunities for their students (Auty et al., 2008). Other benefits to the utilization of growth models for school accountability purposes also exist. First, growth models are able to

track the progress of students who move between schools, and second, Blank (2010) points out the advantages that growth models provide in accounting for prior achievement and other individual student background factors, such as socioeconomic status.

The value-added model (VAM) is a common application of growth models, where relevant background data, such as socioeconomic status and/or prior achievement information, is used to help identify specific impact of programs, leaders, or teachers on student progress. According to Auty et al. (2008), VAMs are used as a means of viewing a school's performance at a point in time separate from non-school related factors. As mentioned next, New York State plans to utilize a VAM in the year 2013 in its teacher and principal evaluation program.

A Transition Matrix is another type of growth model used for school accountability purposes. Here, standard performance ratings such as basic, proficient, and advanced are used as targets against which student growth is measured. Point values are often assigned in this model for accountability purposes (Auty et al., 2008).

Accountability in New York State

As previously noted, in May of 2010, New York State Governor Patterson signed section 3012-c to the Education Law, mandating sweeping changes to the ways educators were evaluated. It included a new evaluation system for school principals based on student growth. The *Great Teachers and Leaders* component of the new evaluation system outlined a 100 point scale, of which 20 points principals receive on their total evaluation are the result of student growth measured on state assessments from year to year.

In August 2012, the first year's growth scores based on the 2010-2011 and 2011-2012 school years' tests were released to superintendents and, subsequently, to building principals. To support the understanding of the new model, NYSED, through its website, released *A principal's*

guide to interpreting your New York State-provided growth score (NYSED EngageNY, 2012a). This guide explained that SGPs were the measure being used to indicate academic growth compared to similar students over the course of the two past school years. Principals' growth was determined based on the MGP, which is the average of the SGPs in each principal's respective building. A subcomponent rating of highly effective, effective, developing, or ineffective (HEDI) and the growth measure of number 0-20 was the basis for the MGP rating.

Table 1 displays the growth score ratings earned by all elementary and middle school principals in New York State (NYSED EngageNY, 2012b). As indicated, 6% of principals fell into the highly effective category, while 79% were categorized as effective. Eight percent of principals were categorized as developing, and 7% of principals in New York State fell into the ineffective rating according to the scores released in August 2012.

Table 1

New York State Principal Growth Score Results Distribution for 2011-2012

HEDI rating and 2011 points*	2011-2012 % of principal MGPs
Highly effective (18-20)	6%
Effective (9-17)	79%
Developing (3-8)	8%
Ineffective (0-2)	7%

Note. *Points assigned within category based on MGP.

Leader Impact

The school building leader's role in impacting student achievement has been examined for decades. What principals can do to increase their students' results is an even more significant question today, as new accountability systems for teachers and principals are not only the focus of recent legislation, but subsequently, they are also the target of media, public opinion, and parent concerns across the country. Therefore, educators are asking the historical and timely

question of what leaders can do to improve student learning.

Leaders and Achievement

Hallinger and Heck (1998) investigated the body of research of principal impact on student achievement. They specifically looked at research between the years of 1980-1995 and reviewed 40 quantitative studies on the impact of leadership on student achievement. The authors used three criteria for selecting studies for their research that included an explicit examination of principals' beliefs and behaviors using principal leadership as a dependent variable, having an explicit measure of student performance as a dependent variable, and the inclusion of research from different countries.

In this work, Hallinger and Heck (1998) organized their study's findings under the headings of purposes and goals, structure and social networks, people, and organizational culture. In the area of purpose and goals, the authors reported that the most consistent findings among the studies they examined found that, "the principals' involvement in framing, conveying, and sustaining the schools' purposes and goals represent an important domain of indirect influence on school outcomes," (Hallinger & Heck, 1998, p. 171). The authors explain that behaviors such as establishing a clear school mission and concise goal setting impacted the work teachers did with students and, therefore, were ultimately related to school effectiveness.

In the area of structure and social networks, Hallinger and Heck (1998) found through their examination of research that transformational leadership actions such as providing support for teachers, encouraging collaboration, and supporting teachers to meet the school's goals produced higher student outcomes. They also indicated that high involvement from community stakeholders in school decision making was a characteristic found in higher performing schools in the studies they examined.

Hallinger and Heck (1998) found, in the area of people, that the interaction among people in a school building is a key factor in leadership influence. They note that principals who attempted to produce changes in people had a greater impact than those who did not, and that providing staff development opportunities, such as modeling desired behavior and individualized teacher support, was linked to teacher perceptions of progress and to higher student outcomes.

Under the heading of organizational culture, Hallinger and Heck (1998) concluded that the literature provided, "less support in this particular empirical literature concerning the principal's role with respect to organizational culture and learning outcomes than the other three domains" (p. 177). They did indicate that principals have an indirect impact through efforts to improve the educational environment and building culture. In turn, the culture impacts programs, teacher behaviors, and ultimately student achievement.

Hallinger and Heck (1998) also noted factors outside the school that impacted principal leadership, such as socioeconomic factors, parent involvement, and school size. These factors impacted principal behavior, which, in turn, impacted student achievement. The researchers indicated that socioeconomic factors had an influence on leadership behaviors exhibited by principals. For example, principals from lower socioeconomic status schools demonstrated weaker home to school connections than those from higher socioeconomic schools. The ultimate impact of these principal behaviors on student achievement was noted by the study's authors. Hallinger and Heck's (1998) research concluded that principals' primary role in impacting student outcomes is through the indirect relationships noted previously. They note that through behaviors such as vision, mission, and goals, principals have the most impact on student outcomes.

Other educational research groups also have reviewed years of research on leader impact

on student achievement in their search for key leader behaviors. In their meta-analysis, Witziers, Bosker, and Krüger (2003) examined the continued exploration for a connection between principal behaviors and student outcomes. The authors asked, "To what extent does educational leadership directly affect student achievement?" (p. 400). They reviewed studies on the direct impact of principal leadership on student achievement completed between the years 1986 and 1996. The authors ultimately included 37 studies in their analysis, selected due to each study having reliable and valid means of measuring school leadership and student achievement. Witziers et al. used Hallinger's (1989) *Principal instructional management rating scale* (PIMRS) instrument as a context by which to quantify behaviors of school principals. This scale included the following three dimensions of educational leadership: (1) defining the school mission, (2) managing the instructional program, and (3) promoting a positive school learning climate.

Findings from Witziers et al. (1989) indicated that correlations between leadership and student achievement were relatively low (below .10). In general, a direct effect of leadership on student achievement was inconclusive. The most applicable findings indicated that the behavior of defining and communicating the mission was the most important leadership behavior related to student outcomes.

Waters, Marzano, and McNulty (2003) offered a review of over 30 years of research on the impact leaders have on student achievement. In their meta-analysis, they identified 21 leadership responsibilities related to student achievement. They offer the example that by increasing one's abilities in the 21 identified leadership areas by one standard deviation, a building leader could expect to see a likely increase in student achievement of 10 percentile points (Waters et al., 2003), thus demonstrating the importance of leaders' knowledge and use of these identified behaviors. The researchers indicate that leadership behaviors can at times impact

student achievement negatively. They concluded that the leader's ability to identify and target instructional practices, while also understanding the change process required to meet their goals, are the two factors associated with a leader's ability to ultimately have a positive or negative impact on student achievement. The authors explained that changes required to improve student achievement in an organization can be viewed as *first order*, meaning the implications on individuals within the group are concrete, simpler, familiar-type tasks, such as new materials, new processes of data tracking, or building on existing systems. *Second order* changes are those changes that do not offer clear or obvious ways things will be improved. These changes are often nonlinear and require individuals to develop new skill sets to improve student achievement.

Table 2 displays the 21 leadership responsibilities identified by Waters et al. (2003) and their connection to student achievement. The *r* values are indicated, which according to Vogt and Johnson (2011) are "a symbol for a Pearson correlation coefficient, which is a bivariate correlation between two variables" (p. 319). In Table 2, the average *r* values indicate the average correlation between the responsibilities listed and the extent to which the principal exhibits the identified behaviors. The table also displays the confidence intervals, which according to Vogt and Johnson (2011) are, "a range of values of a sample statistic that is likely at a given level of probability to contain a population parameter" (p. 67).

Waters et al. (2003) contend that within each of the 21 leader responsibilities there are specific behaviors appropriate for first or second order change. They offer a continuum by which leaders can guide their practice towards selecting the most appropriate leadership practices for their respective organizations based on the type of change and associated practices (Waters et al., 2003, p. 9-12).

Table 2

Principal Leadership Responsibilities: Avg. r & Confidence Intervals

Responsibilities	Extent to which the principal…	Avg r	N Schools	N Studies	95% CI
Culture	Fosters shared beliefs and a sense of community and cooperation	.29	709	13	.23-.37
Order	Establishes a set of standard operating procedures and routines	.26	456	17	.17-.35
Discipline	Protects teachers from issues & influences that would detract from their teaching time or focus	.24	397	10	.14-.33
Resources	Provides teachers with materials & professional development necessary for the successful execution of their jobs	.26	570	17	.18-.34
Curriculum, instruction, assessment	Is directly involved in the design & implementation of curriculum, instruction, & assessment practices	.16	636	19	.08-.24
Focus	Establishes clear goals & keeps those goals in the forefront of the school's attention	.24	1109	30	.18-.29
Knowledge of curriculum, instruction assessment	Is knowledgeable about current curriculum, instruction, & assessment practices	.24	327	8	.13-.35
Visibility	Has quality contact & interactions with teachers & students	.16	432	11	.06-.25
Contingent rewards	Recognizes & rewards individual accomplishments	.15	420	7	.05-.24
Communication	Establishes strong lines of communication with teachers & among students	.23	245	10	.10-.35
Outreach	Is an advocate & spokesperson for the school to all stakeholders	.28	478	14	.19-.35
Input	Involves teachers in the design & implementation of important decisions & policies	.30	504	13	.21-.38
Affirmation	Recognizes & celebrates school accomplishments & acknowledges failures	.25	345	7	.14-.35
Relationship	Demonstrates an awareness of the personal aspects of teachers & staff	.19	497	12	.10-.24
Change agent	Is willing to & actively challenges the status quo	.30	479	7	.22-.38
Optimizer	Inspires & leads new & challenging innovations	.20	444	9	.11-.29
Ideals/beliefs	Communicates & operates from strong ideals & beliefs about schooling	.25	526	8	.17-.33
Monitors/ evaluates	Monitors the effectiveness of school practices & their impact on student learning	.28	1071	30	.23-.34
Flexibility	Adapts leadership behavior to the needs of the current situation & is comfortable with dissent	.22	151	2	.05-.37
Situational awareness	Is aware of the details & undercurrents in the running of the school & uses this information to address current & potential problems	.33	91	5	.11-.37
Intellectual stimulation	Ensures that faculty & staff are aware of the most current theories & practices & makes the discussion of these a regular aspect of the school's culture	.32	321	5	.22-.42

Note. Adapted from "*Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement*," by J. T. Waters, R> J. Marzano, and B. A. McNulty, 2003, p. 4.

In his work, Leverage Leadership (2012), author Paul Bambrick-Santoyo shares information from his experiences with principals at the North Star Academies, part of the Uncommon Schools network in Neward, New Jersey. These schools demonstrated large student achievement gains making them the highest achieving urban schools in New Jersey. Bambrick-Santoyo asserts that there are seven levers, which are core areas in which principals should focus their time, that maximize student learning. The seven levers include: data driven instruction, observation and feedback, instructional planning, professional development, student culture, staff culture, and managing school leadership teams. He contends that by shifting their time, energy, and focus to more instructional leadership-type tasks, school building leaders can have a significant impact on the teaching and learning in their schools and ultimately, on student achievement.

The research studies in this section serve as a sampling of the vast array of research done on the relationship between leadership and student achievement. These studies on leadership and student achievement demonstrate explicit leadership behaviors directly linked to student achievement and also indicate indirect effects principals can have on student outcomes. However, much less research has been done on the link between leadership behaviors and student growth over time.

Leadership and Student Growth

A large body of research exists on the impact of leadership behaviors on student achievement; however, much less research has been completed on the relationship between leadership behaviors and beliefs and student growth.

May, Huff, and Goldring (2012) studied the connection between principal activities and student performance data over time. In their study, the authors examined the behaviors of 39

elementary and middle school principals from urban school districts in the southeastern states over the course of a three year period. Principals in the study participated in as many as seven week-long data collection times where they indicated their daily activities in a log format. In these logs, principals noted their activities in 15 minute intervals and categorized their activities in nine subheadings, including:

(1) Building operations

(2) Finances and financial support

(3) Community or parent relations

(4) School district functions

(5) Student affairs

(6) Personnel issues

(7) Planning/setting goals

(8) Instructional leadership

(9) Principal professional growth. (May et al., 2012, p. 421)

To measure student achievement in the study, scores from state assessments in English language arts and mathematics were gathered for 38,510 students in grades 1-8 during the 2004-2005, 2005-2006, and 2006-2007 school years (May et al., 2012). Ultimately, only 16% of students in the sample produced scores for all three years due to high rates of transiency. A multi-level hierarchal linear model (HLM) was used to measure the connection between principal activities and student performance over the course of the study.

Findings of the May et al. (2012) study indicated that principal activities were varied and that on average, the primary focus for principals was on student affairs (23.3%) and instructional leadership (19.3%). However, these percentages varied by principal from year to year.

Additionally, there appeared to be a relationship between principals who spent relatively more time on finance and personnel issues, as they tended to work in schools with higher test scores, while principals who spent more time on planning and setting goals tended to work in schools with lower test scores. The study's authors note that the most probably explanation for this support's Hallinger and Heck's (1998) notion that the school context in which principals work often defines the work they do, and vice versa. It leaves unresolved the question, do school factors impact leaders' work or does leaders' work impact school factors?

Lastly, May et al. (2012) also found that there was no apparent relationship between principal activities and changes in value added to student achievement. The authors note the need for future study on principal actions, school characteristics, and student achievement over time.

Limitations of the May et al. (2012) study include the low percentage of students with test scores for all three years and also the concept of measuring principal activities in 15 minute intervals. Additionally, the student test scores on state assessments were not able to be directly compared because they were not vertically scaled across grades due to changes in the tests. Therefore, the scores were viewed holistically to measure trends in relative performance of students from year to year.

In their study, Branch, Hanushek, and Rivkin (2012) examined the connection between principals and their effectiveness, as well as the relationship between principals, school achievement, and principal transitions from year to year. Using the administrative data that came from the University of Texas at Dallas (UTD), the researchers examined the variability in principal quality on student growth. Test results from the Texas Assessment of Academic Skills (TAAS) were utilized to measure student outcomes between the years of 1995-2001 and the

research sample included 7,420 principals.

Branch et al.'s (2012) findings indicated a substantial variation in the effectiveness of principals according to the researchers' measures. The authors noted that, "principals in the top 16 percent of the quality distribution will lead annually to student gains that are .05 or more higher than average for all students in the school" (Branch et al., 2012, p. 24). Additionally, the researchers found that principal skill was more important in the most challenging schools, as there was a greater variance of skill sets among the leaders in those organizations. Branch et al. (2012) concluded that there is significant variance in principal quality and that principals do ultimately impact student outcomes.

Dhuey and Smith (2012) also investigated the impact of principal leadership on student growth. The researchers examined principals in North Carolina and student academic data from the years of 1998-2009. They used a value added model (VAM) to study principal experience and educational level, student math and reading scores, and principal mobility.

The study found that experience plays a small role in principal effectiveness and impact on student growth. Additionally, the researchers indicated that principals with a *high value added* notation were able to increase the performance of their students, while *low value added* principals were found to decrease student scores over time. The authors estimated that principals' value added was roughly .17 standard deviations in math and .12 standard deviations in reading. They also found that new principals decrease math and reading scores of their respective students, and therefore, new principals with no past leadership experience are detrimental to student outcomes. The study's authors concluded that the principal's impact on student growth has important implications for practicing leaders.

A political connection. The impact that school building leaders have on student growth

is one that is not only the subject of recent research studies, but it is also paramount in New York State's Reform Agenda. In August 2012, New York State school district leaders were notified by Commissioner King that a corrective action plan will be established for districts who provide low correlation results between student growth scores and any other measure of teacher and principal effectiveness (J. B. King, Jr., personal communication, August 22, 2012). The intent is that the student growth scores should highly correlate with teacher and principal evaluation ratings deemed *other measures of evaluation.*

With such a high emphasis being placed on these student growth scores, districts are now charged with a new measure of success. This critical shift forces educators to consider how leaders can have the greatest impact on student growth. Given the scope of this evaluative requirement, it is important to examine the relationship between school building leader beliefs, school building leader behaviors, and the building growth scores of school building leaders in New York State.

Leader Mindset

Currently, the educational system in New York State and throughout the country is experiencing unprecedented change. The various demands of New York State's Reform Agenda are requiring school leaders to approach their work in a different manner, and often with a different outlook.

The book *Mindset* (Dweck, 2006) is being utilized by NYSED as a tool in the implementation of the Reform Agenda's components. Specifically, the department has offered professional development sessions studying the book and has posted them on its website, engageNY.com. NYSED has also included the book in the 2013-2014 Rubric, *New York State metrics and expectations*. The department recommends that network teams, "Provide ongoing

training on Carol Dweck's *Mindset*…and monitor language, culture, attitudes of district and schools" (NYSED EngageNY, 2013b, Culture of Safety and Development section).

Dweck (2006) discussed the differing state of mind of individuals and the impact that attitudes and beliefs about intelligence and innate abilities can have. Dweck described two main types of mental models and explained the way that individuals under each heading experience the world around them. A fixed mindset, according to Dweck, is the belief that "qualities are carved in stone" and are, for the most part, unchangeable (2006, p. 6). Dweck contends that individuals with a fixed mindset tend to shy away from challenges and often feel defeated by small setbacks. These individuals, according to Dweck, frequently feel the need to prove their intelligence and, therefore, deny opportunities to learn (2006).

Dweck explained that a growth mindset, on the other hand, is characterized by "the belief that abilities can be cultivated" (2006, p. 50). Individuals with a growth mindset, according to Dweck, think that "everyone can change and grow through application and experience" (Dweck, 2006, p. 7). Potential, for these individuals, is seen as unknown and impossible to predict with years of hard work and training (Dweck, 2006).

Dweck researched at length the concept of intelligence and differing beliefs around human potential. In a study with Blackwell and Trzesniewski, Dweck studied 373 students entering seventh grade in four successive years (Blackwell, Trzesniewski, & Dweck, 2007). The study followed these cohorts of students as they advanced through seventh and eighth grade and utilized a set of scales to measure the students' motivational profiles, including their theories of intelligence, goal orientation, beliefs about effort, and attributions and strategies in response to failure. To measure the participants' beliefs about intelligence, the researchers used Dweck's Theories of Intelligence Scale.

Blackwell et al.'s (2007) findings as they relate to student growth were substantial. The students' theory of intelligence was a significant predictor of their math achievement, as students who indicated an incremental theory of intelligence at the beginning of junior high predicted higher math grades earned at the end of the second year of junior high school. Almost two years after the initial theories of intelligence measure was taken, those students who indicated a growth mindset were outperforming their fixed mindset peers. Blackwell et al. (2007) concluded that mindset, therefore, does impact academic growth over time.

Conclusion

The field of education is currently experiencing extraordinary shifts in teaching, learning, and accountability. Principals are searching for ways that they can have the greatest impact on student outcomes, while, at the same time, they are working to remain positive as they lead their organizations through the mandated changes.

A great deal of research has been completed on the impact that principals have on student achievement. The findings of the studies indicate a variety of principal behaviors that may improve learning, including developing and sharing a clear vision, supporting teacher collaboration, and involving the community in the school's work.

The principal's impact on student growth over time is a new and less researched topic. Research studies on this topic indicate mixed findings, where some note no relationship between principal effectiveness and student growth, others indicate a strong relationship between effective school building leaders and their student's growth over time.

Beliefs about growth potential and the concept of intelligence vary among individuals. One's mindset, according to Dweck (2006) can be *fixed*, indicating the belief that intelligence is a set characteristic that typically does not change, or *growth*, indicating the belief that

intelligence is malleable and can be improved and enhanced over time through experience, application, and hard work. Dweck contends that the mindset of individuals impacts their experiences in the world and ultimately, the potential that they reach.

The beliefs that our leaders hold regarding human potential and their students' abilities to improve is a topic that warrants further investigation. Additionally, leader behaviors that impact student academic growth over time are also an area of needed examination. The recent use of Dweck's (2006) book, *Mindset*, by NYSED for purposes of supporting the Reform Agenda's implementation further establishes a strong case for its use in this study. Therefore, it is timely and critical to ask the question, What can school building leaders do or believe to impact the academic growth of their students?

Chapter 3: Methods

Introduction

Race to the Top (RTTT), a national competitive grant program, has reshaped education reform throughout the United States, especially as it relates to the way states compete for funding. The country's education system has experienced sweeping changes under this, the cornerstone of the Obama administration's philosophy on education. The Regents Reform Agenda, New York State's operationalization of the requirements of RTTT, includes an accountability model for principal and teacher effectiveness based on the academic growth of students over time. In August 2012, New York State school district leaders were notified by Commissioner King that a corrective action plan would be established for districts who provided low correlation results between student growth scores and any other measure of teacher and principal effectiveness (J. B. King, Jr., personal communication, August 22, 2012). The intent is that the student growth scores should highly correlate with teacher and principal evaluation ratings deemed *other measures of evaluation*. With such a high emphasis placed on student growth scores, districts are now charged with a new measure of success.

The new education policy priorities in New York State and across the nation have created research opportunities focusing on ways leaders' beliefs and behaviors can influence student growth over time. Given the scope of the new evaluative requirement, it is paramount to examine the relationship between school building leader beliefs, school building leader behaviors, and the building growth scores of school building leaders in New York State.

Now that districts are being held accountable not only for student proficiency on state assessments, but also for student growth over time, this researcher wanted to examine the concept of leader beliefs and the relationship to leader behaviors in the context of recently

released growth scores. The purpose of this quantitative study was to examine the relationship between school building leader beliefs, school building leader behaviors, and student growth scores for elementary principals in New York State. The study was designed the answer the following questions:

1. What beliefs do school building leaders hold regarding human potential?
2. What behaviors do school building leaders report they demonstrate in the performance of their roles as school building leaders?
3. Is there a relationship between school building leader beliefs and student growth scores?
4. Is there a relationship between school building leader behaviors and student growth scores?
5. Are there specific school related factors (district type, principal longevity, or poverty level) that impact student growth scores?

Research Design

A quantitative method was utilized for this research study to examine the relationships between leader beliefs, leader behaviors, and building growth scores. According to Creswell (2009), quantitative research is a "means for testing objective theories by examining the relationship among variables" (Creswell, 2009, pp.4). This method was selected for this study in order to allow for the examination and explanation of relationships among the variables identified and because it allowed for the generalization of the results.

A survey was selected as the method of data collection because it allows the researcher the ability to make descriptive assertions from a sample to a population to make inferences about specific characteristics of a population (Babbie, 1990). The survey used in this study (see

Appendix A) was developed by the researcher and was sent to elementary principals through Survey Monkey, an online resource for administering surveys and collecting data (see Appendix B). The principals were sent a follow up email one week after receiving the first email from the researcher (see Appendix C). The email again described the study, provided the link to the online survey, and thanked those principals who had already participated in the study. Another follow-up email was sent at two weeks and again at three weeks after receiving the first email from the researcher. These three reminders helped to maximize the survey response rate.

The unit of analysis in this study was the building. In all of the research questions, the dependent variable was the building growth scores. The independent variables in this study were the leader beliefs and behaviors of the school building leaders.

Instrument

The survey instrument used in this research consisted of three parts (see Appendix A). Part I requested the principal to identify the building growth score received in the fall of 2012, as well as the demographic information of their building and years of service in his or her present position. Part II consisted of a list of leadership belief statements about intelligence.

The book, *Mindset*, (Dweck, 2006) was used as a foundation from which to build the beliefs portion of the survey due to its research base and connection to the concept of growth. The researcher obtained permission from the Psychology Department of Stanford University to use Dweck's Theories of Intelligence Scale for the belief portion of the survey (See Appendix D). Participants were asked to rate the degree to which they agreed with the statements about intelligence. Table 3 displays the use of Dweck's scale and the corresponding research questions used in the study's survey.

Table 3

Leader Beliefs Survey Questions Using Dweck's (2006) Theories of Intelligence Scale

Mindset	Survey question	Question number
Fixed	You have a certain amount of intelligence and you can't really do much to change it	Q27
	Your intelligence is something about you that you can't change very much	Q28
	You can learn new things, but you can't really change your basic intelligence	Q29
Growth	No matter who you are, you can change your intelligence a lot	Q30
	You can always greatly change how intelligent you are	Q31
	No matter how much intelligence you have, you can always change it quite a bit	Q32

In Part III of the survey, participants were asked to rate their use of specific leadership behaviors in their current roles as principals. This part of the survey was developed based on the ISLLC Standards, which were developed by the CCSSO in 2008 in collaboration with the National Policy Board on Educational Administration (NPBEA). This set of national standards was selected because they were established to not only improve teaching and learning for all children, but also to serve as a model for state educational leadership policies (CCSSO, 2008). To date, 40 states have adopted these widely accepted leadership standards (National Conference of State Legislatures, 2012).

Florida Gulf Coast University's Educational Leadership Program identified performances associated with each ISLLC Standard (ISLLC Standards, n.d.). For the purposes of this stud, the researcher selected three of these performances per ISLLC standard for the *leader behaviors*

portion of the survey. Table 4 displays the ISLLC standards and the corresponding leader behavior performances used in the research survey.

Participants

Participants of this study included principals in public elementary schools in New York State who received building growth scores in the fall of 2012 for the 2010-2011 and 2011-2012 school years. To obtain a growth score, the buildings must have had third and fourth grade students in attendance. Only elementary principals were asked to participate because of the similarity of their job descriptions, student body, building schedule, and staff composition. New York City elementary principals were not included in this research due to the difference in their district's governance structure and scale of implementation.

Approval was obtained from the Institutional Review Board of the Sage Colleges and a list of all elementary principals in New York State was then obtained from NYSED (see Appendix E). Principals were contacted by email and voluntary participation was requested. Principals were informed of the purpose of the study, the method of data collection, and the confidentiality of both data and principal participation. A survey was used to evaluate the relationship between school building leader beliefs, school building leader behaviors, and the building growth scores of school building leaders in New York State. Approximately 1,500 possible participants were contacted to take part in this study.

Validity

To assess the face validity of the survey (Vogt & Johnson, 2011), the survey was sent to a panel of experts, which included three current elementary school principals not included in the survey, for their review and comments. These administrators had direct experience with leadership and had received the growth scores for their buildings from NYSED based on the

Table 4

ISLLC Standards Leader Behavior Performances Used in Survey Instrument

ISLLC Standard	Leader Performances Used in Survey
Standard 1: An educational leader promotes the success of every student by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by all stakeholders.	Identify, clarify, and address barriers to achieving the school's mission (Q9)
	Communicate the vision and mission of the school to staff, parents, students, and community members (Q13)
	Use assessment data related to student learning to develop the school vision and goals (Q24)
Standard 2: An educational leader promotes the success of every student by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth.	Make curriculum decisions based on research and expertise of teachers (Q10)
	Organize professional development offerings that promote a focus on student learning consistent with the school vision and goals (Q18)
	Ensure that student learning is assessed using a variety of techniques (Q21)
Standard 3: An educational leader promotes the success of every student by ensuring management of the organization, operation, and resources for a safe, efficient, and effective learning environment.	Manage collective bargaining and other contractual agreements related to the school (Q11)
	Guarantee that the fiscal resources of the school are managed responsibly, efficiently, and effectively (Q15)
	Ensure that the school plant, equipment, and support systems operate safely, efficiently, and effectively (Q19)
Standard 4: An educational leader promotes the success of every student by collaborating with faculty and community members, responding to diverse community interests and needs, and mobilizing community resources.	Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals (Q14)
	Provide opportunities for staff to develop collaborative skills (Q16)
	Make the school highly visible, actively involved, and in constant communication with the larger community (Q23)
Standard 5: An educational leader promotes the success of every student by acting with integrity, fairness, and in an ethical manner.	Demonstrate appreciation for and sensitivity to the diversity in the school community (Q12)
	Consider the impact of your administrative practices on others (Q22)
	Examine your personal and professional values (Q25)
Standard 6: An educational leader promotes the success of every student by understanding, responding to, and influencing the political, social, economic, legal, and cultural context.	Facilitate an ongoing dialogue with representatives of diverse community groups (Q17)
	Provide students and their families opportunities to influence the environment in which the school operates (Q20)
	Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes (Q26)

2010-2011 and 2011-2012 school years. They were asked to take the survey and to comment on the extent to which the survey questions addressed the research questions and they were also asked to recommend the elimination or revision of questions. Their perspectives helped determine the validity of the survey instrument. The survey was revised to reflect the feedback received.

Data Analysis

Once survey data was collected, the researcher examined the relationships between school building leader beliefs, school building leader behaviors, and student growth scores. The data was analyzed in accordance with the study's research questions.

The data in this study was analyzed using the Statistical Package for Social Sciences (SPSS) Version 21.0. The survey results were downloaded from Survey Monkey into Microsoft Excel and imported into SPSS 21 for analysis. The researcher's account in Survey Monkey was password protected and was accessible only to the researcher. The only people with access to the data were the principal investigator and doctoral candidate. The data was stored in the researcher's personal laptop computer, which was password protected. Once the study was completed, the data was destroyed and all hard copies of the data were shredded. All electronic versions of the data (computer and flash drives) were deleted. No individually identifiable data was used or published in any of the reports generated from this study, as the results of the research were only reported in aggregate.

Research questions one and two were analyzed utilizing descriptive statistics, including simple frequency counts, percentages, means, and standard deviations. To answer research questions three, four, and five, data was analyzed using inferential techniques, including Pearson correlation, analysis of variance (ANOVA), and multiple regression analysis.

Once survey data were collected, the researcher examined the relationships between leader beliefs, leader behaviors, and student growth scores. The data were analyzed in accordance with the study's research questions.

Researcher Bias

This researcher has been an elementary school principal for five years in a suburban school district in Upstate New York and served as a leader during the first year of full implementation of the Regents Reform Agenda. This researcher believes that principals play a critical role in impacting student growth through the work they do each day in their respective schools. In conducting this study, particularly in the development of the survey instrument, the researcher established an objective questionnaire that attempted to elicit information in a non-biased manner. Questions from another researcher (Dweck) were utilized for Part II of the survey instrument to measure the beliefs of the leaders in the study. The researcher utilized information from the panel of experts to help identify any language in the survey that suggested bias.

Chapter 4: Data Analysis

This chapter presents the analysis of data collected from a survey to address the research questions of the study. Specifically, the purpose of this quantitative study was to examine the relationship between leader beliefs, leader behaviors, and student growth scores. The study was designed to answer the following questions:

1. What beliefs do school building leaders hold regarding human potential?
2. What behaviors do school building leaders report they demonstrate in the performance of their roles as school building leaders?
3. Is there a relationship between school building leader beliefs and student growth scores?
4. Is there a relationship between school building leader behaviors and student growth scores?
5. Are there specific school related factors (district type, principal longevity, or poverty level) that impact student growth scores?

The analysis begins with an overview of the demographic characteristics of the respondents, including their years of service in their current position, district type, and district size. This section is followed by an analysis of the data collected in the survey to address each research question. Finally, a general analysis of findings is presented.

Sample

Data in this research study was collected in the form of a survey on Survey Monkey. The survey instrument was sent to 1531 elementary school principals in New York State, which included all elementary principals minus those in New York City. All elementary principals

were emailed the quantitative survey from an email list received from NYSED. One hundred ninety-two elementary principals responded to the survey, resulting in a response rate of 12.5%.

Table 5 presents demographic information on the study's participants. It represents frequency distribution of the participants' years in their current position, their district type, and their age. As indicated in the table, the greatest percentage of respondents, 29.0%, reported

Table 5

Frequency Distribution of Demographics for Survey Respondents

Variable	*N*	Frequency	%
Years in this principalship	187		
1-2		56	29.9%
3		16	8.6%
4-5		29	15.5%
6-8		38	20.3%
9-10		23	12.3%
More than 10		25	13.4%
District type	165		
Urban		33	18.5%
Suburban		89	53.1%
Rural		46	28.4%
Age	166		
25>		1	0.6%
25-30		0	0.0%
31-35		9	5.5%
36-40		30	18.2%
41-49		64	38.8%
50-55		26	15.8%
56-65		31	18.8%
> 65		4	2.4%
Gender	162		
Male		65	40.1%
Female		97	59.9%

serving in their current position for 1-2 years, followed by 20.3% of respondents, who reported serving in their current position for 6-8 years. The majority of respondents, 53.9%, reported working in suburban districts, while only 27.9% worked in rural districts, and 20% worked in an urban setting. The percentage of respondents between the ages of 41-49 was 38.8%, which represented the largest age group in the study. Combining the first three categories, only 6.1% of respondents were under the age of 35, which represented the smallest group among research participants. More females than males participated in the research, as 59.9% represented females and 40.1% of respondents were males.

Research Question One: *What beliefs do school building leaders hold regarding human potential?*

The data analysis for the first research question is presented in this section. Research question one examined the beliefs of elementary school principals in regards to human potential. Specifically, the researcher used Dweck's Theories of Intelligence Scale to measure the mindset of the research participants as they related to intelligence. Permission was granted to the researcher from the Psychology Department of Stanford University to use Dweck's Theories of Intelligence Scale. The scale included a series of six statements about intelligence and asked survey respondents to indicate the degree to which they agreed or disagreed with each statement.

According to Dweck (2006), the statements in survey questions 27, 28, and 29 represent a fixed mindset about intelligence, thus indicating a general belief that intelligence is a permanent characteristic about individuals that generally stays unchanged. In contrast, the statements in survey questions 30, 31, and 32 represent a growth mindset about intelligence, thus demonstrating a general belief that intelligence is a malleable characteristic of individuals that

can be changed and grown over time. Research participants responded to the mindset statements by indicating their level of agreement with each.

Table 6 provides a description of the frequency distribution of respondent answers to the survey questions regarding human potential.

Table 6

Leader Beliefs Response Frequencies Using Dweck's Theories of Intelligence Scale

	Strongly agree		Agree		Mostly agree		Mostly disagree		Disagree		Strongly disagree	
Question description	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
You have a certain amount of intelligence, and you can't really do much to change it (Q 27)	0	0.0%	8	5.2%	14	9.2%	30	19.6%	63	41.2%	38	24.8%
Your intelligence is something about you that you can't change very much (Q28)	0	0.0%	8	5.3%	14	9.3%	36	23.8%	54	35.8%	39	25.8%
You can learn new things, but you can't really change your basic intelligence (Q29)	1	0.7%	7	4.6%	21	13.7%	39	25.5%	57	37.3%	28	18.3%
No matter who you are, you can change your intelligence a lot (Q30)	20	12.5%	37	24.3%	47	30.9%	33	21.7%	15	9.9%	1	0.7%
You can always greatly change how intelligent you are (Q31)	20	13.2%	38	25.0%	51	33.6%	31	20.4%	12	7.9%	0	0.0%
No matter how much intelligence you have, you can always change it quite a bit (Q32)	22	14.5%	38	25.0%	51	33.6%	31	20.4%	10	6.6%	0	0.0%

Survey question 27 asked respondents the extent to which they agreed or disagreed with the statement, "You have a certain amount of intelligence, and you can't really do much to change it." Approximately 14% of respondents indicated that they agreed with this statement to some extent, with 0% indicating strong agreement with the statement, 5.2% indicating agreement with the statement, and 9.2% indicating that they mostly agreed with the statement. The majority

of respondents, 85.6%, indicated some extent of disagreement with the statement that intelligence cannot be changed. Survey questions 28 and 29 had similar results, as 85.4% and 81.1% of respondents indicated some degree of disagreement with each question respectively. Results from these three survey questions indicated a general disagreement on the part of survey participants with the notion that intelligence is fixed and unchangeable.

In contrast, survey questions 30, 31, and 32 represented statements of a growth mindset. Question 30 stated, "No matter who you are, you can change your intelligence a lot" and, again, asked survey respondents to indicate the extent to which they agreed or disagreed with the statement. Two thirds of respondents agreed with this statement to some extent, while one third indicated disagreement. The respondents on the next two questions indicated even stronger agreement. Survey question 31 asked respondents to respond to the statement, "You can always greatly change how intelligent you are," and 71.8% of respondents agreed to some extent. Question 32 stated, "No matter how much intelligence you have, you can always change it quite a bit," and 73.1% of respondents indicated some extent of agreement with the statement.

Results from this frequency distribution of responses on the Theories of Intelligence Scale (Dweck, 2006) demonstrated that, in general, the elementary principal participants in this study indicated through their survey question responses that the majority of them have a growth mindset. Therefore, they believe in the potential to improve intelligence.

Table 7 displays the means and standard deviations of the leader belief survey questions using Dweck's Theories of Intelligence Scale. The question with the highest mean was a statement about one's ability to change intelligence, question 32, where participants indicated that they strongly agreed with this statement ($M = 4.20$). Question 27 had the lowest mean ($M = 2.29$), indicating that the research participants generally disagreed with the notion that

intelligence is fixed and cannot be changed. As a group, the questions that, according to Dweck, reflect a growth mindset, had higher means than did the statements reflecting a fixed mindset and a belief that intelligence is fixed and generally unmalleable.

Table 7

Leader Beliefs Means Using Dweck's Theories of Intelligence Scale

Question description	*N*	*M*	*SD*
You have a certain amount of intelligence, and you can't really do much to change it (Q27)	153	2.29	1.098
Your intelligence is something about you that you can't change very much (Q28)	151	2.32	1.117
You can learn new things, but you can't really change your basic intelligence (Q29)	153	2.51	1.119
No matter who you are, you can change your intelligence a lot (Q30)	152	4.06	1.192
You can always greatly change how intelligent you are (Q31)	152	4.15	1.132
No matter how much intelligence you have, you can always change it quite a bit (Q32)	152	4.20	1.124

Table 8 displays the correlation between the participants' answers to the survey questions using Dweck's Theories of Intelligence Scale (Dweck, 2006). It was important for the researcher to examine the way participants answered the two sets of mindset questions, both fixed and growth, in order to determine their overall beliefs regarding human potential. To answer this question, a Pearson correlation was utilized to measure the relationship between the two sets of mindset questions. The researcher applied Davis' (1971) descriptors (negligible = .00 to .09; low = .10 to .29; moderate = .30 to .49; substantial = .50 to .69; very strong = .70 to 1.00) for correlation coefficients to determine the strength of the relationships between the variables.

Table 8

Relationships Among Leader Belief Questions Using Dweck's Theories of Intelligence Scale

Question description	Q27	Q28	Q29	Q30	Q31	Q32
You have a certain amount of intelligence, and you can't really do much to change it (Q27)	1					
Your intelligence is something about you that you can't change very much (Q28)	.902**	1				
You can learn new things, but you can't really change your basic intelligence (Q29)	.849**	.890**	1			
No matter who you are, you can change your intelligence a lot (Q30)	-.608**	-.607**	-.691**	1		
You can always greatly change how intelligent you are (Q31)	-.641**	-.662**	-.749**	.803**	1	
No matter how much intelligence you have, you can always change it quite a bit (Q32)	-.674**	-.687**	-.766**	.797**	.907**	1

Note. *p <.05. **p < .01.

As Table 8 indicates, a number of substantial correlations were noted. A positive correlation was found among the fixed and growth mindset groups of questions, as participants who indicated an agreement with one of the questions in their respective set tended to agree with that set of questions. Additionally, principals who indicated a disagreement with one of the questions in each of the sets tended to disagree with the group of questions, thus equating to a negative correlation. As Table 8 displays, all of the correlations among Dweck's Theories of Intelligence Scale survey questions resulted in statistically significant relationships. Positive correlations ranged from .797 to .907, which represented very strong correlations according to Davis (1971), while negative correlations ranged from -.607 to -.766, indicating substantial to very strong relationships, as well.

The finding that participants in this study strongly demonstrated a fixed or growth mindset was important because it allowed further questions to be rooted in the knowledge that principals either demonstrated a fixed or growth mindset and that they solidly demonstrated a tendency towards one set of beliefs or the other.

Research Question Two: *What behaviors do principals demonstrate in the performance of their roles as school building leaders?*

The data analysis for the second research question is presented in this section. Research question two examined the behaviors of elementary school principals in their roles as building leaders.

To answer this research question, information was taken from Part III of the survey instrument, where participants were asked to rate their use of specific leadership behaviors in their current roles as principals. This set of survey questions was developed based on the ISLLC Standards, which were developed by the CCSSO in 2008 in collaboration with the National Policy Board on Educational Administration (NPBEA). This set of national standards was selected by the researcher because they were established to not only improve teaching and learning for all children, but to also serve as a model for state educational leadership policies (CCSSO, 2008).

Florida Gulf Coast University's Educational Leadership Program identified performances associated with each ISLLC Standard (ISLLC Standards, n.d.). For purposes of this study, the researcher selected three of these performances per ISLLC standard for the *leader behaviors* portion of the survey. These standards were then reviewed by the panel of experts.

Table 9 displays the means and standard deviations of the leader behaviors survey questions using the leadership performances from the ISLLC Standards (CCSSO, 2008). Results

Table 9

Leader Behaviors Rank Ordered from Highest to Lowest Mean Score

Question description	*N*	*M*	*SD*
Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes (Standard 6, Q26)	154	3.60	.517
Consider the impact of your administrative practices on others (Standard 5, Q22)	154	3.50	.563
Examine your personal and professional values (Standard 5, Q25)	153	3.49	.586
Provide opportunities for staff to develop collaborative skills (Standard 4, Q16)	153	3.46	.550
Ensure that student learning is assessed using a variety of techniques (Standard 2, Q21)	154	3.43	.547
Guarantee that the fiscal resources of the school are managed responsibly, efficiently, and effectively (Standard 3, Q15)	154	3.36	.624
Demonstrate appreciation for and sensitivity to the diversity in the school community (Standard 5, Q12)	154	3.36	.654
Use assessment data related to student learning to develop the school vision and goals (Standard 1, Q24)	154	3.34	.565
Ensure that the school plant, equipment, and support systems operate safely, efficiently, and effectively (Standard 3, Q19)	153	3.21	.749
Organize professional development offerings that promote a focus on student learning consistent with the school vision and goals (Standard 2, Q18)	151	3.20	.757
Make curriculum decisions based on research and expertise of teachers (Standard 2, Q10)	155	3.19	.774
Make the school highly visible, actively involved, and in constant communication with the larger community (Standard 4, Q23)	154	3.18	.638
Communicate the vision and mission of the school to staff, parents, students, and community members (Standard 1, Q13)	154	3.14	.647
Identify, clarify, and address barriers to achieving the school's mission (Standard 1, Q9)	155	3.10	.605
Provide students and their families opportunities to influence the environment in which the school operates (Standard 6, Q20)	152	2.89	.554
Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals (Standard 4, Q14)	153	2.58	.848
Facilitate an ongoing dialogue with representatives of diverse community groups (Standard 6, Q17)	155	2.39	.707
Manage collective bargaining and other contractual agreements related to the school (Standard 3, Q11)	154	2.00	.893

are reported from highest to lowest mean score, indicating the leadership behaviors the survey respondents exhibited most often to least often in their current positions.

The question with the highest mean was Question 26, "Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes" (M = 3.60). The question with the second highest mean was Question 22, which indicated the leadership behavior, "Consider the impact of your administrative practices on others" (M = 3.50).

Question 11, "Manage collective bargaining and other contractual agreements related to the school," had the lowest mean (M = 2.0), indicating that the research participants generally spent little time dealing with issues related to unions and contracts in their respective positions. The question with the second lowest mean was Question 17, "Facilitate an ongoing dialogue with representatives of diverse community group" (M = 2.39), which demonstrated that the principals in the study did not rate communicating with various groups in their communities as a behavior that they often exhibited. "Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals" (Q14) was another leadership behavior respondents indicated they performed less frequently as well (M = 2.580).

All three leader behaviors associated with ISLLC Standard 5, "Acting with integrity, fairness, and in an ethical manner," scored within the top half of leader behavior means of the 18 listed. These leader behaviors included "Consider the impact of your administrative practices on others" (Q22), "Examine your personal and professional values" (Q25), and "Demonstrate appreciation for and sensitivity to the diversity in the school community" (Q12). This finding

indicates that the participants in the study reported that they often displayed the ethical and moral behaviors associated with ISLLC Standard 5 in their work as principals.

Whereas these three leader behaviors were noted to have similar means in the study, the leader behaviors associated with ISLLC Standard 6, "Understanding, responding to, and influencing the political, social, economic, legal, and cultural context," resulted in inconsistent findings in the research. While the leadership behavior, "Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes" (Q26) received the highest mean of all leadership behaviors in the survey (M = 3.6), the other two leadership behaviors associated with ISLLC Standard 6 resulted in relatively low means. The leader behaviors "Provide students and their families opportunities to influence the environment in which the school operates" (Q20) and "Facilitate an ongoing dialogue with representatives of diverse community groups" (Q17) scored within the lowest four leader behaviors in terms of their mean score. This indicates that leadership behaviors associated with ISLLC Standard 6 were reported by principals to be performed less consistently than other ISLLC Standard behaviors.

Table 10 displays a description of the frequency distribution of responses for each of the ISLLC standard performances used in the survey instrument.

The question that received the highest percentage of responses indicating that the principals in the study performed the task either very frequently or frequently was survey question 26, "Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes," at 98.7%. The performance behavior "Examine your personal and professional values" (Q25) was also highly rated by survey participants, as 95.4% indicated that they exhibit this behavior very frequently or

Table 10

Leader Behavior Response Frequencies Rank Ordered from Highest to Lowest Mean Score

Leader behavior	Very infrequently		Infrequently		Frequently		Very frequently	
	n	%	*n*	%	*n*	%	*n*	%
Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes (Standard 6, Q26)	0	0%	2	1.3%	57	37%	95	61.7%
Consider the impact of your administrative practices on others (Standard 5, Q22)	0	0%	5	3.2%	67	43.5%	82	53.2%
Examine your personal and professional values (Standard 5, Q25)	0	0%	7	4.6%	64	41.8%	82	53.6%
Provide opportunities for staff to develop collaborative skills (Standard 4, Q16)	0	0%	4	2.6%	74	48.4%	75	49%
Ensure that student learning is assessed using a variety of techniques (Standard 2, Q21)	0	0%	4	2.6%	80	51.9%	70	45.5%
Guarantee that the fiscal resources of the school are managed responsibly, efficiently, and effectively (Standard 3, Q15)	2	1.3%	6	3.9%	80	51.9%	66	42.9%
Demonstrate appreciation for and sensitivity to the diversity in the school community (Standard 5, Q12)	2	1.3%	9	5.8%	75	48.7%	68	44.2%
Use assessment data related to student learning to develop the school vision and goals (Standard 1, Q24)	0	0%	7	4.5%	87	56.5%	60	39%
Ensure that the school plant, equipment, and support systems operate safely, efficiently, and effectively (Standard 3, Q19)	5	3.3%	15	9.8%	76	49.7%	57	37.3%
Organize professional development offerings that promote a focus on student learning consistent with the school vision and goals (Standard 2, Q18)	3	2%	22	14.6%	68	45%	58	38.4%
Make curriculum decisions based on research and expertise of teachers (Standard 2, Q10)	6	3.9%	16	10.3%	75	48.4%	58	37.4%
Make the school highly visible, actively involved, and in constant communication with the larger community (Standard 4, Q23)	0	0%	20	13%	87	56.5%	47	30.5%
Communicate the vision and mission of the school to staff, parents, students, and community members (Standard 1, Q13)	0	0%	23	14.9%	87	56.5%	44	28.6%
Identify, clarify, and address barriers to achieving the school's mission (Standard 1, Q9)	0	0%	21	13.5%	97	62.6%	37	23.9%
Provide students and their families opportunities to influence the environment in which the school operates (Standard 6, Q20)	1	.7%	29	19.1%	107	70.4%	15	9.9%
Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals (Standard 4, Q14)	16	10.5%	53	34.6%	64	41.8%	20	13.1%
Facilitate an ongoing dialogue with representatives of diverse community groups (Standard 6, Q17)	13	8.4%	75	48.4%	60	38.7%	7	4.5%
Manage collective bargaining and other contractual agreements related to the school (Standard 3, Q11)	53	34.4%	56	36.4%	37	24%	8	5.2%

frequently. Ninety-six point seven percent of principals in the study indicated that they very frequently or frequently performed the behavior "Provide students and their families opportunities to influence the environment in which the school operates" (Q20).

The question that received the highest percentage of principals indicating that they performed the leadership performance very infrequently was survey question 11, "Manage collective bargaining and other contractual agreements related to the school." While 34.4% of respondents indicated performing this leadership behavior very infrequently, an additional 36.4% indicated performing it infrequently, for a total of 70.8% of respondents indicating that this leadership behavior not performed frequently in their current roles. Forty-five point one percent of participants indicated that they very infrequently or infrequently performed the leadership behavior "Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals" (Q14). A total of 56.8% of the principals noted that they "Facilitate an ongoing dialogue with representatives of diverse community groups" (Q17) either very infrequently or infrequently.

Table 11 displays the mean scores of each group of leader behavior by ISLLC Standard. As the table indicates, the mean scores among the different leadership behaviors associated with the same ISLLC Standards were not consistent.

Table 11

Leader Behaviors Mean Scores by ISLLC Standard

Question description	*N*	*M*	*SD*
Identify, clarify, and address barriers to achieving the school's mission (Standard 1, Q9)	155	3.10	.605
Communicate the vision and mission of the school to staff, parents, students, and community members (Standard 1, Q13)	154	3.14	.647
Use assessment data related to student learning to develop the school vision and goals (Standard 1, Q24)	154	3.34	.565
Make curriculum decisions based on research and expertise of teachers (Standard 2, Q10)	155	3.19	.774
Organize professional development offerings that promote a focus on student learning consistent with the school vision and goals (Standard 2, Q18)	151	3.20	.757
Ensure that student learning is assessed using a variety of techniques (Standard 2, Q21)	154	3.43	.547
Manage collective bargaining and other contractual agreements related to the school (Standard 3, Q11)	154	2.0	.893
Guarantee that the fiscal resources of the school are managed responsibly, efficiently, and effectively (Standard 3, Q15)	154	3.36	.624
Ensure that the school plant, equipment, and support systems operate safely, efficiently, and effectively (Standard 3, Q19)	153	3.21	.749
Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals (Standard 4, Q14)	153	2.58	.848
Provide opportunities for staff to develop collaborative skills (Standard 4, Q16)	153	3.46	.550
Make the school highly visible, actively involved, and in constant communication with the larger community (Standard 4, Q23)	154	3.18	.638
Demonstrate appreciation for and sensitivity to the diversity in the school community (Standard 5, Q12)	154	3.36	.654
Consider the impact of your administrative practices on others (Standard 5, Q22)	154	3.50	.563
Examine your personal and professional values (Standard 5, Q25)	153	3.49	.586
Facilitate an ongoing dialogue with representatives of diverse community groups (Standard 6, Q17)	155	2.39	.707
Provide students and their families opportunities to influence the environment in which the school operates (Standard 6, Q20)	152	2.89	.554
Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes (Standard 6, Q26)	154	3.60	.517

Research Question Three: *Is there a relationship between school building leader beliefs and student growth scores?*

The data analysis for the third research question is presented in this section. Research question three examined the relationship between the beliefs of elementary school principals and the student growth scores in their respective buildings. Dweck's Theories of Intelligence Scale (Dweck, 2006) was used to measure the beliefs of the participants in the study. Principals reported their growth scores on a scale from 1-20, and those numbers were utilized to examine the relationship with their beliefs. "No growth score" was also an option indicated in the survey. It should be noted that the scale from New York State did include the possibility of receiving a score of zero, but the researcher did not include this option for survey participants. This omission resulted in a minimal impact on the overall study's findings due to the fact that only a small percentage of principals received a growth score of zero. See Table 1 for the breakdown of the first year of scores. A total of 7% of all elementary and middle school principals in New York State received a score of 0-2, thus indicating that the total number of principals in elementary schools in New York State minus New York City who received a growth score of zero was minimal.

Fifty-six of the principals who participated in this research indicated that they had been the principal in their building for 1-2 years, so their survey responses were eliminated from the analyses related to this research question; their beliefs regarding human potential were not relevant due to the fact that they were not present in the building for the two consecutive years that the growth scores were earned.

One hundred forty-eight of survey participants answered the survey question where principals were asked to report their building's growth score based on the 2010-2011 and 2011-

2012 school years' New York State assessment results. Of that number, 54 of the principals indicated that they received no growth score, which could be attributed to factors such as placement in a primary building, which does not have students of testing age, or the principals choosing not to share their growth score.

Table 12 displays the correlation between growth scores reported by survey participants and the beliefs of the leaders according to Dweck's Theories of Intelligence Scale (Dweck, 2006).

Table 12

Pearson Correlations Between Leader Beliefs and Growth Scores

Leader beliefs	Growth score
You have a certain amount of intelligence, and you can't really do much to change it (Q27)	.159
Your intelligence is something about you that you can't change very much (Q28)	.135
You can learn new things, but you can't really change your basic intelligence (Q29)	.042
No matter who you are, you can change your intelligence a lot (Q30)	-.097
You can always greatly change how intelligent you are (Q31)	-.124
No matter how much intelligence you have, you can always change it quite a bit (Q32)	-.089

Note. $*p < .05$. $**p < .01$.

When applying a Pearson correlation between growth scores and leader beliefs, no statistically significant correlations were noted. Applying Davis' (1971) descriptors (negligible = .00 to .09; low = .10 to .29; moderate = .30 to .49; substantial = .50 to .69; very strong = .70 to 1.00) for correlation coefficients, the researcher found that all relationships fell between the negligible and low ranges. This indicated that no connection could be made in this study between principal beliefs and their students' growth on New York State assessments.

Research Question Four: *Is there a relationship between school building leader behaviors and student growth scores?*

The data analysis for the fourth research question is presented in this section. Research question four examined the relationship between the behaviors of elementary school principals and the student growth scores in their respective buildings. To answer the leadership behaviors portion of this research question, information was taken from Part III of the survey instrument, where participants were asked to rate their use of specific leadership behaviors in their current roles as principals according to the leadership performances of the ISLLC Standards (CCSSO, 2008). Principals reported their growth scores on a scale from 1-20, and those numbers were utilized to examine the relationship with their behaviors. See Table 1 for a breakdown of the first year of scores. A total of 7% of all elementary and middle school principals in New York State received a score of 0-2, thus indicating that the total number of principals in elementary schools in New York State minus New York City who received a growth score of zero was minimal.

Tables 13 to 18 display the relationships between leader behaviors and growth scores for the leadership behaviors associated with each of the ISSLLC Standards. A Pearson correlation was used to measure the relationship between each leader behavior and the principal reported growth scores. Leadership behaviors are grouped according to their corresponding ISLLC Standard.

Table 13 shows that no significant relationships were found among principal reported growth scores and the leadership behaviors associated with ISLLC Standard 1.

Table 13

Pearson Correlations Between ISLLC Standard 1 Leader Behaviors and Growth Scores

ISLLC Standard 1: An educational leader promotes the success of every student by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by all stakeholders.	
Leader behaviors	Growth score
Identify, clarify, and address barriers to achieving the school's mission (Q9)	.048
Communicate the vision and mission of the school to staff, parents, students, and community members (Q13)	.081
Use assessment data related to student learning to develop the school vision and goals (Q24)	-.024

Note. $*p < .05$. $**p < .01$.

No statistically significant relationships were found among principal reported growth scores and the leadership behaviors associated with ISLLC Standard 2 (see Table 14).

Table 14

Pearson Correlations Between ISLLC Standard 2 Leader Behaviors and Growth Scores

ISLLC Standard 2: An educational leader promotes the success of every student by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth.	
Leader behaviors	Growth score
Make curriculum decisions based on research and expertise of teachers (Q10)	.204
Organize professional development offerings that promote a focus on student learning consistent with the school vision and goals (Q18)	.019
Ensure that student learning is assessed using a variety of techniques (Q21)	.173

Note. $*p < .05$. $**p < .01$.

As Table 15 indicates, no significance was found in the relationships between leadership behaviors of management and operations and the principal reported growth scores in the study.

Table 15

Pearson Correlations Between ISLLC Standard 3 Leader Behaviors and Growth Scores

ISLLC Standard 3: An educational leader promotes the success of every student by ensuring management of the organization, operation, and resources for a safe, efficient, and effective learning environment	
Leader behaviors	Growth score
Manage collective bargaining and other contractual agreements related to the school (Q11)	-.035
Guarantee that the fiscal resources of the school are managed responsibly, efficiently, and effectively (Q15)	.083
Ensure that the school plant, equipment, and support systems operate safely, efficiently, and effectively (Q19)	.044

Note. $*p < .05$. $**p < .01$.

Table 16 indicates a statistically significant relationship was found between principal growth scores and the leadership behavior "Make the school highly visible, actively involved, and in constant communication with the larger community."

Table 16

Pearson Correlations Between ISLLC Standard 4 Leader Behaviors and Growth Scores

ISLLC Standard 4: An educational leader promotes the success of every student by collaborating with faculty and community members, responding to diverse community interests and needs, and mobilizing community resources.	
Leader behaviors	Growth score
Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals (Q14)	-.093
Provide opportunities for staff to develop collaborative skills (Q16)	.035
Make the school highly visible, actively involved, and in constant communication with the larger community (Q23)	.230**

Note. $*p < .05$. $**p < .01$.

As indicated in Table 17, the Pearson correlations between leader behaviors associated with ISLLC Standard 5 and principal reported growth scores resulted in no statistically significant relationships.

Table 17

Pearson Correlations Between ISLLC Standard 5 Leader Behaviors and Growth Scores

ISLLC Standard 5: An educational leader promotes the success of every student by acting with integrity, fairness, and in an ethical manner.	
Leader behaviors	Growth score
Demonstrate appreciation for and sensitivity to the diversity in the school community (Q12)	.013
Consider the impact of your administrative practices on others (Q22)	-.054
Examine your personal and professional values (Q25)	.106

Note. $*p < .05$. $**p < .01$.

Table 18 shows no significance in relationships between leader behaviors from ISLLC Standard 6 and growth scores of principals in the study.

Table 18

Pearson Correlations Between ISLLC Standard 6 Leader Behaviors and Growth Scores

ISLLC Standard 6: An educational leader promotes the success of every student by understanding, responding to, and influencing the political, social, economic, legal, and cultural context.	
Leader behaviors	Growth score
Facilitate an ongoing dialogue with representatives of diverse community groups (Q17)	-.007
Provide students and their families opportunities to influence the environment in which the school operates (Q20)	.209
Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorizes (Q26)	.180

Note. $*p < .05$. $**p < .01$.

The researcher applied Davis' (1971) descriptors (negligible = .00 to .09; low = .10 to .29; moderate = .30 to .49; substantial = .50 to .69; very strong = .70 to 1.00) for correlation coefficients to quantify the strength of the relationships among the variables of leader behaviors and principal reported growth scores.

As indicated in the tables, 17 out of the 18 of the relationships between the variables in the correlation were weak; according to Davis's descriptors, all but one correlation fell within the negligible and low ranges. There was only one statistically significant correlation found between one of the 18 leader behaviors and the growth scores indicated by principals. The behavior "make the school highly visible, actively involved, and in constant communication with the larger community" (Q23) resulted in a positive correlation ($r = .230$, $p < .01$) with the growth scores. However, this relationship, according to Davis (1971) still fell within the low range. Each of the other 17 leader behaviors indicated no significant relationship with the growth scores, thus indicating minimal findings in a relationship between what leaders in this study reported doing in their respective roles as principals and the growth scores their buildings received.

Research Question Five: *Are there specific school related factors (district type, principal longevity, or poverty level) that impact student growth scores?*

The data analysis for the fifth research question is presented in this section. Research question five examined the relationship between the growth scores of the research participant principals and school related factors. To this examine question, a multiple regression analysis was utilized to examine the strength of the relationship between growth scores (dependent variable) and the independent variables of principal longevity, poverty level, and district type. Table 19 indicates a statistically significant relationship between the school related factors (independent variables) and the dependent variable of building growth scores ($F = 9.991$, $p < .001$).

Table 19

Multiple Regression Analysis: Growth Scores and School Related Factors

A. Model summary				
	R	R^2	Adj. R^2	RMSEA
	.550	.303	.273	3.579

B. Analysis of variance					
Model	*SS*	*Df*	*MS*	*F*	Sig.
Regression	*383.855*	*3*	*127.952*	*9.991*	*.000*
Residual	*883.624*	*69*	*12.806*		
Total	*1267.479*	*72*			

Table 20 indicates that the only independent variable that was found to be statistically significant in relation to building growth scores was the percentage of students receiving free and reduced lunch in a building (t = -5.415, p < .001). Neither the principal longevity nor the district type was found to be statistically significant.

Table 20

Multiple Regression: School Related Factors Coefficients

Model	*b*	Std. error	*b**	*t*	Sig.
(Constant)	16.728	2.123		7.877	.000
Principal longevity	-.112	.332	-.034	-.338	.737
District type	-.096	.654	-.015	-.146	.884
Poverty level	-.090	.017	-.554	-5.415	.000**

Note. *p < .05. **p < .01.

The research questions in this chapter were designed to examine the relationship between school related factors and building growth scores of the principals in the study. The school related factors explored in relationship with student growth scores included district type, principal longevity, and poverty level. A multiple regression analysis indicated that the only independent variable that was found to be statistically significant in relation to building growth scores was the percentage of students receiving free and reduced lunch in a building.

Chapter 5: Summary of Findings, Conclusions, and Recommendations

Background

This quantitative study was designed to examine the relationship between school building leader beliefs, school building leader behaviors, and student growth scores for elementary principals in New York State.

The following questions were developed to address the purpose of this research project:

1. What beliefs do school building leaders hold regarding human potential?
2. What behaviors do school building leaders report they demonstrate in the performance of their roles as school building leaders?
3. Is there a relationship between school building leader beliefs and student growth scores?
4. Is there a relationship between school building leader behaviors and student growth scores?
5. Are there specific school related factors (district type, principal longevity, or poverty level) that impact student growth scores?

Summary of Findings

Research question 1: Leader beliefs. Research question 1 examined the beliefs that school building leaders held regarding human potential. *Mindset* (Dweck, 2006) was used as a framework by which to gauge leader beliefs in the research's survey instrument. It was selected because of its research base and its connection to the concept of growth. Dweck described two types of mindsets: a fixed mindset, which is the belief that "qualities are carved in stone" and are for the most part, unchangeable (Dweck, 2006, p. 6), and a growth mindset, which is characterized by "the belief that abilities can be cultivated" (Dweck 2006, p. 50). She argued

that individuals with a fixed mindset believe that intelligence is a set characteristic, but individuals with a growth mindset believe that intelligence is able to be improved and cultivated over time.

The researcher obtained permission from the Psychology Department of Stanford University to use Dweck's Theories of Intelligence Scale for the belief portion of the survey. Participants were asked to rate the degree to which they agreed with the statements about intelligence. Table 1 in Chapter 1 displays the use of Dweck's scale and the corresponding research questions used in the study's survey.

The researcher hypothesized that building leaders would have a growth mindset and, therefore, exhibit optimistic answers on the Theories of Intelligence Scale questions. Through their occupation choice, educators have exhibited a desire to work with children and have experienced years of classes on education theory, instruction, and learning. Therefore, the researcher assumed that principals would indicate a belief that intelligence would be able to be increased over time.

Leaders in this study demonstrated an overall growth mindset as it relates to the Theories of Intelligence Scale. Table 6 in Chapter 4 displays the response frequencies to each of the six questions in Dweck's (2006) Theories of Intelligence Scale. As the table demonstrates, the majority of principal participants in the study agreed to some extent with the set of three growth mindset questions and disagreed to some extent with the set of fixed mindset questions, thus indicating an overall belief that intelligence is malleable.

As Table 1 demonstrates, Dweck's (2006) Theories of Intelligence Scale asks similar questions in different ways. The scale includes three questions about a fixed mindset and three questions regarding a growth mindset. A Pearson correlation was used to examine the extent to

which the participants were consistent in the way that they answered each set of Dweck's questions. As shown in Table 8, the growth mindset and fixed mindset questions in Dweck's scale in this study were answered consistently; leaders were consistent in their reported beliefs regarding human potential.

The principal participants in this study believed in human potential and the ability to grow intelligence. They demonstrated a growth mindset. These leaders appeared to be grounded in optimism and the idea that individuals can improve their intelligence over time. The importance of this belief as it relates to current educational reform should not be minimized. The mindset of building leaders as it relates to their work in the context of the Regents Reform Agenda is critical. Teacher and leader effectiveness, and subsequently their accountability status, is now measured by student growth over time. Teachers and principals are being called to improve students' scores on state assessments from year to year and to utilize data systems to measure incremental gains or losses in the classroom throughout the year. The fact that these leaders demonstrate the innate belief that students' intelligence can, in fact, be improved offers a sense of optimism to the new accountability system for the changes it attempts to initiate. If leaders believe that students' intelligence can improve, then the work that they subsequently do with teachers and students will likely be positively impacted by this optimistic belief and will hopefully, ultimately improve student growth over time.

Research question 2: Leader behaviors. Research Question 2 examined the behaviors that school building leaders demonstrated in their roles as principals. To gauge leader behaviors in this study, principals were asked to rate their use of specific leadership behaviors in their current roles as principals. This part of the survey was developed based on the ISLLC Standards, which were developed by the CCSSO in 2008 in collaboration with the National Policy Board on

Educational Administration (NPBEA). Florida Gulf Coast University's Educational Leadership Program identified performances associated with each ISLLC Standard (ISLLC Standards, n.d.). For the purposes of this study, the researcher selected three of these performances per ISLLC standard for the *leader behaviors* portion of the survey. Table 4 displays the ISLLC standards and the corresponding leader behavior performances used in the research survey.

The researcher hypothesized that certain behaviors would be more strongly demonstrated than others in the principals' work as building leaders. Due to the various demands of the Regents Reform Agenda, including the Common Core Standards and the new requirements for data driven instruction, the researcher expected that tasks related to instructional leadership may have been demonstrated more by principals than managerial tasks, such as building and facilities related behaviors.

Findings from the study indicated that principals demonstrated a wide variety of behaviors in their roles. As Table 9 indicates, the means of responses for each behavior were varied, and principals reported inconsistency in relation to many of the behaviors they used in their work.

According to Table 9, the survey question with the highest mean was Question 26, "Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorities" ($M = 3.60$). One possible reason for this leadership behavior receiving such a high score may be the various demands being placed on today's leaders. The New York State Reform Agenda requires principals to help facilitate the integration of the Common Core Standards, to help guide teachers through a new accountability system, and to implement new ways of tracking student progress. The requirements associated with the agenda directly impact teacher, principal, and school accountability, so it is natural that

principals placed high priority on the leadership behaviors of ensuring that these policies were properly enacted. Another reason for this leadership behavior being ranked so high may be the role that leaders saw themselves playing. The traditional role of building leader as manager may be one that some leaders still associated with, and therefore, they prioritized their time with these types of tasks.

Survey Question 11, "Manage collective bargaining and other contractual agreements related to the school," had the lowest mean (M = 2.0), indicating that the research participants generally spent little time dealing with issues related to unions and contracts in their respective positions. This is a positive finding in regards to the relationship between administration and collective bargaining units, indicating the probability of a harmonious environment in these school buildings. If building leaders are working productively with their respective unions, they may not need to spend a great deal of time on the tasks associated with managing them. This finding also may indicate that the demands of current reform legislation require school building leaders to focus their time and energy on the implementation of new programs. Another possible reason for this question receiving such a low mean score is that, perhaps, building leaders may not be the individuals in the organization responsible for the behavior of managing collective bargaining and instead, for instance, district level administrators, such as the superintendent or human resources department, may instead take on this role. Therefore, principals would rate this leadership behavior low if they were not faced with this work in their roles at the building level.

The three leader behaviors associated with ISLLC Standard 5, "Acting with integrity, fairness, and in an ethical manner," scored within the top half of the 18 leader behavior means listed. These leader behaviors included "Consider the impact of your administrative practices on others" (Q22), "Examine your personal and professional values" (Q25), and "Demonstrate

appreciation for and sensitivity to the diversity in the school community" (Q12). The leaders in this study reported that they frequently demonstrated the ethical and moral behaviors associated with ISLLC Standard 5 in their positions as principals.

The fact that integrity, ethics, and fairness play an important role the work of today's principals is a positive finding. Our leaders have a critical impact on the teachers, students, and families with whom they work, so the knowledge that they value moral principles offers a general sense of optimism towards the work they do in our schools. Additionally, it is important to consider the role that these moral principles play in relation to the new demands of current educational reform. School building leaders are now navigating their way through a number of requirements from the Reform Agenda, including data driven instruction, strict accountability measures, and new instructional standards. The notion that principals still rate ethical leadership behaviors as a priority in their roles is a positive finding and offers insight into the way our leaders are approaching their work; they are doing so with integrity, fairness, and a careful consideration of the ways their work impacts others.

Research question 3: The relationship between leader beliefs and growth scores. Research question 3 examined the relationship between school building leader beliefs and student growth scores. Dweck's (2006) Theories of Intelligence Scale was used to measure the beliefs of the participants in the study. Principals reported their growth scores, and those numbers were utilized to examine the relationship with their beliefs.

Fifty-six of the principals who participated in this research indicated that they had been the principal in their building for 1-2 years, so their survey responses were eliminated from the analyses related to this research question. Their beliefs regarding human potential were not relevant due to the fact that they were not present in the building for the two consecutive years

that the growth scores were earned. One hundred forty-eight of the remaining survey participants reported their building's growth score based on the 2010-2011 and 2011-2012 school years' New York State Assessment results. Of that number, 54 of the principals indicated that they received no growth score, which could be attributed to factors such as placement in a primary building that does not have students of testing age or the principals choosing not to share their growth scores.

The researcher hypothesized that leader beliefs would demonstrate a relationship with student growth scores. The impact that leaders have on student achievement is well documented. Hallinger and Heck (1998) reported in their meta-analysis that, "the principals' involvement in framing, conveying, and sustaining the schools' purposes and goals represent an important domain of indirect influence on school outcomes" (p. 171). They explained that behaviors, such as establishing a clear school mission and concise goal setting, impacted the work teachers did with students and were ultimately related school effectiveness. The researcher considered the impact that leader beliefs play in shaping school mission and inadvertently, the work that their teachers do with students and assumed that a connection would be found between leader beliefs and student growth over time.

As demonstrated in Table 11, no statistically significant correlations were noted between leader beliefs and student growth scores. According to Davis' (1971) descriptors for correlation coefficients (negligible = .00 to .09; low = .10 to .29; moderate = .30 to .49; substantial = .50 to .69; very strong = .70 to 1.00), all relationships fell between the negligible and low ranges.

No relationship was found between the beliefs of the leaders in this study and their students' growth scores. As noted previously, Hallinger and Heck (1998) indicated in their research that principals are most able to impact student achievement indirectly through efforts to

improve the educational environment and culture, as it in turn impacted programs, teacher behaviors, and ultimately, student achievement. The authors explain in their meta-analysis of principal impact on student achievement that most direct effect models indicated little or no significant relationships between leadership and student outcomes. Hallinger and Heck contend that, instead, models examining more indirect methods of leader impact demonstrate a greater relationship of positive effects to student achievement. Examples of these indirect ways principals impact student achievement include producing changes in people through social interaction and influencing teacher perceptions and commitment to the organization, which, subsequently, has a positive effect on student learning.

The strength of the relationship in this research study between leader beliefs and principal reported student growth scores may not have been strong enough to demonstrate a direct correlation. According to Hallinger and Heck (1998), principal impact on student achievement is detected mostly through the indirect effect leaders have. Perhaps a more sophisticated model that takes into account the influence that leadership has on teachers, students, and instructional methods, and then its ultimate impact on student growth scores, may yield more conclusive results.

Research question 4: The relationship between leader behaviors and growth scores. Research question 4 examined the relationship between leadership behaviors of the principals in the study and the building growth scores reported by the study's participants. To answer the leadership behaviors portion of this research question, information was taken from Part III of the survey instrument, where participants were asked to rate their use of specific leadership behaviors in their current roles as principals according to the leadership performances of the ISLLC Standards (CCSSO, 2008). The researcher hypothesized that specific leadership traits

would have a relationship with increased student growth scores. Literature on the impact of leadership behaviors on student achievement is abundant and offers the field of education a number of behaviors principals can demonstrate to ultimately impact student outcomes. Waters, Marzano, and McNulty (2003) offered a review of over 30 years of research on the impact leaders have on student achievement. In their meta-analysis, they indicate that there is a substantial relationship between leadership and student achievement. They identified 21 leadership responsibilities related to student achievement. Table 2 displays the leadership responsibilities and their respective impact on student achievement measures. Considering the numerous ways the authors identify that leaders can impact student achievement, this researcher believed the same would hold true for leaders' ability to impact student growth scores.

Tables 12 to 17 display the results of Pearson correlations between leader behaviors and growth scores for the leadership behaviors associated with each of the ISSLLC Standards. Seventeen of the 18 leadership behaviors from the survey instrument showed minimal relationships with the student growth scores. The fact that this research study was only able to detect one minimal relationship between leadership behaviors and student growth scores was surprising. A great deal of research supports the concept that leadership behaviors do impact student outcomes. As noted in the discussion for research question 3, the strength of the relationship in this research study between leader behaviors and principal reported student growth scores may not have been strong enough to demonstrate a direct correlation. It is possible that a stronger research model that accounts for more specific leadership behaviors may have a greater ability to detect a connection with student growth scores on New York State assessments. Additionally, a consideration could be made to utilize a different set of leadership

behaviors other than the ISLLC Standards to quantify principal actions that impact student growth.

The behavior "make the school highly visible, actively involved, and in constant communication with the larger community" (Q23) (r = .230) was the only leadership behavior in this study that demonstrated a positive relationship with the growth scores, which according to Davis (1971), still fell within the low range. This finding is in alignment with Hallinger and Heck (1998), who indicate in their meta-analysis that greater involvement from a variety of stakeholders in the community is a trait found in schools with higher student performance. The concept of our community's role in our schools is one that should not be overlooked. This research's findings support the notion that schools that involve their communities have students who perform higher. Interestingly, this leadership behavior of involving the community in our schools was ranked only 12th of the 18 leader behavior means, indicating that the principals in this study did not report demonstrating this behavior as frequently as others in the survey. The implications on this finding for system level leaders are important. Making community involvement in our schools a priority not only establishes positive relationships, but it can also yield positive student outcomes.

Research question 5: The relationship between school related factors and growth scores. Research question 5 examined the relationship between the school related factors of district type, principal longevity, and poverty level and the student growth scores reported by the principals in the study. The researcher hypothesized that no school related factors would be tied to the student growth scores. The literature on the utilization of student growth models explains that the objective of selecting these models is simply to measure growth over time. According to Goldschmidt et al. (2005):

> The term growth model generally refers to models of education accountability that measure progress by tracking the achievement scores of the same students from one year to the next with the intent of determining whether or not, on average, the students made progress. (p. 4)

While most achievement measures of student learning take into account one snapshot of where students are at a specific point in time, growth models, in contrast, attempt to indicate student progress over time. Therefore, students' progress can be viewed as a comparison of students' estimated improvements in learning to set state or district targets (Blank, 2010).

A multiple regression analysis was utilized to explore the relationship between the growth scores, the dependent variable, and the three independent variables of district type, principal longevity, and poverty level relative to one another. The results of the multiple regression indicated that the only independent variable found to be statistically significant in relation to building growth scores was the percentage of students receiving free and reduced lunch in a building (t = -.5415, p < .001). Neither principal longevity nor district type was found to be statistically significant.

According to *A principal's guide to interpreting your New York State-provided growth score* (NYSED EngageNY, 2012b), the 2011-2012 growth scores for New York State did take into account factors that may have impacted student growth. SGPs, which were averaged as MGPs to determine building-level and principal accountability scores, were reported first as unadjusted and then took into account a student's status in a variety of areas. The definition of an adjusted MGP according the guide indicates, "Adjusted MGPs are the mean of the SGPs produced by SED's growth model that are based on similar prior achievement scores and also include consideration of ELL status, SWD status, and economic disadvantage student

characteristics" (NYSED EngageNY, 2013a, p. 7). Although these considerations were made for the designation of a student as economically disadvantaged, it appears that the level of poverty, or the extent to which other mitigating factors associated with poverty impact student scores, may not have been considered in the model.

The concept that poverty level, the percentage of students receiving free or reduced lunch in a school, was the only school related factor found to have a relationship with the student growth scores in the study is sobering, yet familiar. Our country's schools are plagued with a variety of concerns, but the belief that all students can grow and improve their intelligence serves as a driving force for many of our educators in their work with students each day. The knowledge that the level of poverty directly impacts and, in many cases, impedes student growth over time is a crucial consideration as our schools' leaders plan for improving our schools. A closer look at poverty and supporting children and families must be a priority for improving student academic growth.

Recommendations for System Level Leaders

Community involvement. A small, yet important statistically significant finding in this research is the positive link between community involvement in schools and student growth scores. The fact that involving the community in our schools can increase student academic growth is one that should be considered as today's system level leaders establish district missions and visions to incorporate community partners in their schools' work. In a policy brief by the National Education Association (NEA) (2008), NEA President von Roekel noted that "In addition to the vital role that parents and family members play in a child's education, the broader community too has a responsibility to assure high-quality education for all students" (p. 1).

Some of the specific suggestions offered by the NEA on schools involving their respective communities include:

- Survey educators and families to determine needs, interests, and ideas about partnering.
- Develop and pass family-friendly policies and laws
- Provide professional development on family and community engagement for school faculties.
- Offer training for parents and community stakeholders on effective communications and partnering skills.
- Provide better information on school and school district policies and procedures.

It is recommended that system level leaders of today and of the future make community involvement a priority. These leaders must make a commitment to the continual examination of best practices in engaging our communities in our work with students.

Poverty. The impact that poverty has historically had on student achievement has now been detected in this particular student growth model. The overarching effect that poverty has on our students' progress and on our work is challenging to quantify. It is clear that poverty, quite simply, impedes our students' academic progress. According to the New York State Council on Children and Families, 51.7% of students in New York State's public schools in grades K-6 received free or reduced lunch in the 2009-2010 school year (Council on Children and Families, Kids' Wellbeing Indicators Clearinghouse (KWIC), n.d.). The notion that over half of our students in New York State are designated as economically disadvantaged offers system level leaders not only a challenge, but also a mandate that supporting these students must be a priority. It is recommended that system level leaders investigate the specific factors related to the poverty

in their area and work to establish support systems for families in their communities. Working to combat the impact that poverty has on academic growth while providing supportive resources for families, such as school-based clinics, full service schools, and school-community partnerships, should be considered. Supporting not only the whole child, but also the whole family, is a charge for system level leaders as they consider the impact of poverty on student progress.

NYSED's recommendations on the continued implementation of the Regents Reform Agenda. System level leaders everywhere, but particularly in New York State, must be familiar with the recommendations offered by NYSED during this, the second year of the Regents Reform Agenda's implementation. EngageNY.org, a website dedicated to the implementation of the Reform Agenda's specific components, has been established to serve as the key source of information for New York State educators. While the site offers parents, teachers, and leaders specific information regarding curriculum and data, it also offers some general guidance for multiple stakeholders as the second year of the Reform Agenda's work begins.

In the 2013-2014 rubric entitled, *NYS metrics and expectations*, the NYSED outlines steps that teachers, principals, superintendents, and network teams should take to support the Reform Agenda's implementation in the areas of curriculum, instruction, and feedback; data driven instruction; APPR implementation; and culture of safety and development. In this area, the rubric recommends that network teams, "Provide ongoing training on Carol Dweck's *Mindset*…and monitor language, culture, attitudes of district and schools" (NYSED EngageNY, 2013b, Culture of safety and development section). The concept of examining educators' mindsets and discussing the impact that educators' mental models have on their work with students is a recommendation of this researcher, as well. Although a direct relationship was not

found between leader mindset and student growth in this study, it is still suggested that system level leaders examine the role of mindset with their teachers and school building leaders and consider the impact that a growth mindset can have on students' progress.

The 2013-2014 rubric *NYS metrics and expectations* also recommends that in supporting the implementation of the APPR plans, principals "understand and be able to effectively use all measures of student learning, observations, and other evidence to constantly cultivate changes in teacher practice and school-wide instructional strategies" (NYSED EngageNY, 2013b, APPR implementation). This researcher agrees with the concept of using student growth measures to guide our instructional goals. While the examination of student growth over time is important, it is equally as important to utilize the data collected from these growth measures to help inform the instruction in classrooms to best meet the needs of students. Specific information regarding areas of weakness and also areas of strength can guide teachers to provide more tailored instructional plans for all students.

Leadership preparation programs. It is recommended that system level leaders integrate the topic of poverty and its impact on teaching and learning into leadership preparation programs to effectively inform our future leaders of the challenges that poverty presents. Equipping future leaders with knowledge, as well as sharing the responsibility for and importance of removing barriers to education, will create a generation of leaders who assume leadership roles ready to support students and families in their schools. Additionally, the connection between community involvement and student growth in this study revealed a positive relationship; therefore, it is recommended that leadership preparation programs place a strong emphasis on the importance of involving communities in our schools' work and the role that leaders play in establishing these important relationships with our communities.

Recommendations for Future Studies

While many of this study's findings were inconclusive, and it was challenging to detect a direct relationship between leader beliefs, leader behaviors, and student growth scores, there are recommendations for future studies that examine student growth scores in New York State. First, it is quite possible that the model utilized in this research was not strong enough to detect the relationships identified by the study's objectives. Therefore, a more carefully designed model, taking into account leader beliefs and specific leadership behaviors, may allow for easier identification of impacting factors of student growth scores. Perhaps, through investigating the connections between leader beliefs and teacher beliefs and behaviors and then the ultimate impact on student growth scores, one may better identify specific leadership beliefs or behaviors associated with improving student growth over time. Additionally, it is recommended that teacher mindsets be examined and carefully factored into the more direct model noted previously for the direct impact they may have on student outcomes.

It is also recommended that the model utilized by NYSED to measure student growth from academic year to year be examined to ensure that poverty level is sufficiently accounted for in the formula. The state has increased the adjustment given to students of poverty from the 2011-2012 school year to this, the 2013-2014 school year. In their 2013 document, *Explaining student growth scores to teachers and principals*, NYSED acknowledges that they have modified the method utilized to adjust SGPs in grades 4-8 English Language Arts and Math in the area of poverty level, to now include both a student's designation as economically disadvantaged and the percentage of students in poverty in that student's class or course (NYSED EngageNY, 2013a). While the adjustment is in alignment with the findings of this research study, a further

investigation of the impact that poverty level plays on growth scores is suggested, as the results from this study indicate a significant relationship between the two variables.

In addition to the role that poverty plays within the context of the new accountability model for NYSED, it is also recommended that NYSED fund a major research effort to inform schools on best practices in supporting students in poverty. The impact of poverty is certainly found in student academic outcomes, but it also reaches far beyond the classroom. Educators must deepen their understanding of supporting students and families of poverty if they are to mitigate the impacts identified on teaching and learning and on the futures of our New York State students.

In addition to the adjustment NYSED made to student growth scores to account for socioeconomic level, they also accounted for disability status, English Language Learner (ELL) status, and academic history in their current model. In the document, *Explaining student growth scores to teachers and principals*, NYSED (2013a) states, "These additional factors ensure that educator results are even less likely than before to be related to characteristics of classrooms and schools" (p. 3). They also note that in the future, they may decide to add additional characteristics to the adjustment model, as they are available and approved by the Board of Regents. Because this research study found a significant relationship between the characteristic of poverty and the student growth scores, which is contrary to the objective of the adjustment model, it is recommended that future researchers examine the impact that all of these factors have on student growth and that they closely investigate the extent to which they are appropriately accounted for in the State's current accountability model. Through a secondary analysis of existing data, it is recommended that future researchers utilize access to statewide

data to examine the impact that these already identified student characteristics have on the student growth scores.

Finally, it is recommended that future studies examine the second year of New York State student growth scores in relation to the first year's scores, as well as to leader beliefs and behaviors that may impact them. As the state and its leaders continue to implement the Reform Agenda's components, improvements in the accountability models, implementation factors, and ultimately in educators' work with students will naturally surface. It is the work of system level leaders to be able to detect these changes and to then pave the way for their respective organizations to implement them fully for the benefit of all students.

References

Annual professional performance review of classroom and building principals, New York State Education Law § 3012-c (2010).

Auty, W., Bielawski, P., Deeter, T., Hirata, C. H., Rheim, J, Goldschmidt, P., . . . Williams, A. (2008). *Implementer's guide to growth models*. Retrieved from the Council of Chief State School Officers website: http://www.ccsso.org/Documents/2008/Implementers_Guide_to_Growth_2008.pdf

Babbie, E. R. (1990). *Survey research methods* (2nd ed.). Belmont, CA: Wadsworth.

Bambrick-Santoyo, P. (2012). *Leverage Leadership: A Practical Guide to Building Exceptional Schools*. John Wiley & Sons.

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*(1), 246-263. doi: 10.1111/j.1467-8624.2007.00995.x

Blank, R. K. (2010). *State growth models for school accountability: Progress on development and reporting measures of student growth*. Retrieved from the Council of Chief State School Officers website: http://www.ccsso.org/Documents/2010/ State_Growth_Models_2010.pdf

Branch, G. F., Hanushek, E. A., & Rivkin, S. G. (2012). *Estimating the effect of leaders on public sector productivity: The case of school principals*. Retrieved from National Center for Analysis of Longitudinal Data in Education Research website: http://www.caldercenter.org/upload/Hanushek_wp66.pdf

Council of Chief State School Officers. (2008). *Educational leadership policy standards: ISLLC 2008 as adopted by the National Policy Board for Educational Administration*. Retrieved

from http://www.ccsso.org/documents/2008/educational_leadership_policy_standards_2008.pdf

Council on Children and Families, Kids' Wellbeing Indicators Clearinghouse (KWIC). (n.d.) Retrieved from http://www.nyskwic.org/

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Davis, J. A. (1971). *Elementary survey analysis*. Englewood Cliffts, NJ: Prentice-Hall.

Dhuey, E., & Smith, J. (2012). *How school principals influence student learning*. Retrieved from Society for Research on Educational Effectiveness website: http://www.sole-jole.org/13170.pdf

Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York, NY: Random House.

Goldschmidt, P., Roschewski, P., Choi, K. Auty, W., Hebbler, S., Blank, R., & Williams, A. (2005). *Policymakers' guide to growth models for school accountability: How do accountability models differ?* Retrieved from the Council of Chief School Officers website: http://www.ccsso.org/Documents/2005/Policymakers_Guide_To_Growth_2005.pdf

Hallinger, P., & Heck, R. H. (1998). Exploring the principal's contribution to school effectiveness: 1980-1955*. *School Effectiveness and School Improvement: An International Journal of Research, Policy, and Practice, 9*(2), 157-191. doi: 10.1080/0924345980090203

ISLLC Standards. (n.d.). Retrieved from Florida Gulf Coast University, College of Education website: http://coe.fgcu.edu/faculty/valesky/isllcstandards.htm

King, J. B., Jr. (2011, May 12). *Amendment to Section 100.2(o) of the Commissioner's Regulations and addition of a new Subpart 30-2 to the Rules of the Board of Regents relating to annual professional performance reviews of classroom teachers and building principals* (Memorandum to the honorable members of the Board of Regents). Retrieved from New York State Education Department website: http://www.regents.nysed.gov/meetings/2011Meetings/May2011/511bra4.pdf

May, H., Huff, J., & Goldring, E. (2012). A longitudinal study of principals' activities and student performance. *School Effectiveness and School Improvement: An International Journal of Research, Policy, and Practice, 23*(4), 417-439. doi: 10.1080/09243453.2012.678866

National Education Association. (2008). *Parent, family, community involvement in education: An NEA policy brief* (No. PB11). Washington, DC: NEA Education Policy and Practice Department, Center for Great Public Schools. Retrieved from http://www.nea.org/assets/docs/PB11_ParentInvolvement08.pdf

New York State Education Department. (n.d.). *The Regents Education Reform Plan and New York State's Race to the Top (RTTT) application*. Retrieved from http://usny.nysed.gov/rttt/application/narrativesummary.pdf

New York State Education Department, EngageNY. (2012a). *A principal's guide to interpreting your New York State-provided growth scores*. Retrieved from http://www.engageny.org/sites/default/files/resource/attachments/principals_guide_to_interpreting_your_growth_score_2011-12.pdf

New York State Education Department, EngageNY. (2012b, August). *New York State Education Department external briefing presentation on 2011-12 New York State growth scores*

[Powerpoint presentation]. Retrieved from http://http://www.engageny.org/sites/default/files/resource/attachments/external-briefing-2011-12-growth_scores.pdf

New York State Department of Education, EngageNY. (2013a). *Explaining student growth scores to teachers and principals: Key discussion points.* Retrieved from http://www.engageny.org/sites/default/files/resource/attachments/explaining_growth_scores_faq_2012-13.pdf

New York State Education Department, EngageNY. (2013b). *New York State metrics & expectations: 2013-2014*. Retrieved from http://www.engageny.org/resource/new-york-state-metrics-expectations-2013-2014

U.S. Department of Education. (2009). *Race to the Top program executive summary*. Retrieved from http://www2.ed.gov/programs/racetothetop/executive-summary.pdf

U.S. Department of Education. (2012). *Race to the Top New York report: Year 1: School year 2010-2011*. Retrieved from http://www2.ed.gov/programs/racetothetop/performance/new-york-year-1.pdf

Vogt, W. P., & Johnson, B. (2011). Di*ctionary of statistics & methodology: A nontechnical guide for the social sciences* (4th ed.). Thousand Oaks, CA: Sage.

Waters, J. T., Marzano, R. J., & McNulty, B. A. (2003). *Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement*. Aurora, CO: Mid-continent Research for Education and Learning. Retrieved from http://www.mcrel.org/~/media/Files/McREL/Homepage/Products/01_99/prod82_BalancedLeadership.ashx

Witziers, B., Bosker, R. J., & Krüger, M. L. (2003). Educational leadership and student achievement: The elusive search for an association. *Educational Administration Quarterly, 39*(3), 398-425. doi:10.1177/0013161X03253411

Appendix A

Survey Instrument

School building leader beliefs and behaviors

Demographic information

This survey should take approximately 10-12 minutes to complete. You may stop at any time and you do not have to answer any questions with which you are not comfortable. Thank you for participating in this research.

1. How long have you been the principal of THIS school, including this year as one full year?

- ◯ 1-2 years
- ◯ 3 years
- ◯ 4-5 years
- ◯ 6-8 years
- ◯ 9-10 years
- ◯ More than 10 years

School building leader beliefs and behaviors

Demographic information

2. My district is best characterized as

- ☐ Urban
- ☐ Suburban
- ☐ Rural

3. What was your building's growth score that you received this year?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14

4. My DISTRICT'S approximate enrollment for 2012-2013 is

5. My BUILDING'S approximate enrollment for 2012-2013 is

6. The approximate percentage of students in my building receiving free and reduced lunch for 2012-2013 is

7. My current age is

◯ 25> ◯ 25-30 ◯ 31-35 ◯ 36-40 ◯ 41-49 ◯ 50-55 ◯ 56-65 ◯ >65

8. Are you male or female?

- ◯ Male
- ◯ Female

School building leader beliefs and behaviors

School building leader behaviors

Please indicate the extent to which you DEMONSTRATE the following behaviors in your role as principal.

9. Identify, clarify, and address barriers to achieving the school's vision

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

10. Make curriculum decisions based on research and expertise of teachers

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

11. Manage collective bargaining and other contractual agreements related to the school

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

12. Demonstrate appreciation for and sensitivity to the diversity in the school community

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

13. Communicate the vision and mission of the school to staff, parents, students, and community members

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

14. Establish partnerships with area businesses, institutions of higher education, and community groups to strengthen programs and support school goals

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

15. Guarantee that the fiscal resources of the school are managed responsibly, efficiently, and effectively

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

16. Provide opportunities for staff to develop collaborative skills

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

17. Facilitate an ongoing dialogue with representatives of diverse community groups

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

School building leader beliefs and behaviors

18. Organize professional development offerings that promote a focus on student learning consistent with the school vision and goals

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

19. Ensure that the school plant, equipment, and support systems operate safely, efficiently, and effectively

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

20. Provide students and their families opportunities to influence the environment in which the school operates

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

21. Ensure that student learning is assessed using a variety of techniques

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

22. Consider the impact of your administrative practices on others

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

23. Make the school highly visible, actively involved, and in constant communication with the larger community

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

24. Use assessment data related to student learning to develop the school vision and goals

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

25. Examine your personal and professional values

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

26. Ensure that the school community works within the framework of policies, laws, and regulations enacted by local, state, and federal authorities

Very Infrequently	Infrequently	Frequently	Very F equently
◯	◯	◯	◯

School building leader beliefs and behaviors

School building leader beliefs

Below is a list of several belief statements from the work of Dr. Carol Dweck of Stanford University. Please read each statement and indicate the one circle that shows how much you AGREE with it. There are no right or wrong answers.

27. You have a certain amount of intelligence, and you can't really do much to change it.

Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree
◯	◯	◯	◯	◯	◯

28. Your intelligence is something about you that you can't change very much.

Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree
◯	◯	◯	◯	◯	◯

29. You can learn new things, but you can't really change your basic intelligence.

Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree
◯	◯	◯	◯	◯	◯

30. No matter who you are, you can change your intelligence a lot.

Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree
◯	◯	◯	◯	◯	◯

31. You can always greatly change how intelligent you are.

Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree
◯	◯	◯	◯	◯	◯

32. No matter how much intelligence you have, you can always change it quite a bit.

Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree
◯	◯	◯	◯	◯	◯

School building leader beliefs and behaviors

Thank You!

Thank you for participating in this research study. Your time is greatly appreciated!

Appendix B

Email to Participants

To: [Email]
From: xxxxxx@sage.edu via surveymonkey.com
Subject: Research Study on Leader Beliefs, Behaviors, and Student Growth Scores

Dear Elementary Principal,

I am a doctoral candidate in the Educational Leadership program at The Sage Colleges in Albany, New York. I am writing to invite you to participate in a study that will investigate the beliefs and behaviors school leaders have and exhibit, and any relationships that may exist with the recently released student growth scores.

The benefit of participating in this research will be to help to inform the field of education as to any leadership beliefs or behaviors that impact student growth. The information gathered from this study will help to inform the field of education as to any leadership beliefs or behaviors that positively impact student achievement.

The researcher will collect only self-reported data from you and will not have access to the identity of the individual completing the survey or individual school building. After the completion of the study, the data will be destroyed. There is minimal risk in participating in this study in sharing your building growth scores and beliefs and behaviors with the researcher. Great care will be taken throughout the research to ensure that confidentiality is protected. Responses will only be reported in the aggregate and no individual will be identified in the study results. This research may be published in a professional journal or presented at professional conferences or meetings. I would be happy to share a copy of the results with you.

Your participation in the study will involve the completion of a 10-12 minute survey that consists of approximately 30 questions. The survey is segmented into three parts; the first section asks about the demographics of your building, the second section asks you to rate the extent to which you utilize specific leadership behaviors in your work, and the third section is taken from the work of Dr. Carol Dweck of Stanford University, where you will be asked the extent to which you agree or disagree with a series of belief statements.

Participation in this study is voluntary. You may stop at any time during the survey or choose not to answer any questions with which you are not comfortable. If you decide to participate in the survey, that will constitute informed consent.
If you have any general questions about this study, please feel free to contact me at xxxxxx@sage.edu or my doctoral chairperson, Dr. Ann Myers at xxxxxxx@sage.edu. This study has been proved by the Institutional Review Board of the Sage Colleges, so should you have concerns, you may also contact Dr. Esther Haskvitz at xxxxxx@sage.edu.
Thank you for your consideration.

If you wish to participate, please go to https://www.surveymonkey.com/s.aspx

Please click on the following link if you are not interested in participating in the study.
https://www.surveymonkey.com/optout.aspx

Sincerely,

Kathleen Chaucer, Elementary School Principal
Doctoral Candidate, Sage Graduate Schools, Albany, NY

Appendix C

Follow Up Email to Participants

To: [Email]
From: xxxxxx@sage.edu via surveymonkey.com
Subject: Reminder: Participate in Leader Beliefs, Behaviors, and Student Growth Scores Survey

Dear Elementary Principals,

Last week, you received an email requesting your participation in a 10-12 minute survey related to my doctoral research about school building leader beliefs, behaviors, and student growth scores. If you have already completed this survey, I thank you. If not, I invite you to take a few minutes to complete it.
https://www.surveymonkey.com/s.aspx

If you are not interested in participating, please use this link.
https://www.surveymonkey.com/optout.aspx

Thank you for taking the time to support continued research in our field – your participation is greatly appreciated.

Sincerely,
Kathleen Chaucer, Doctoral Candidate, Sage Graduate Schools, Albany, NY

Appendix D

Permission to use Theories of Intelligence Scale

From: XXXXXXXX [mailto:XXXXXXX@stanford.edu]
Sent: Monday, December 10, 2012 7:09 PM
To: Chaucer, Kathleen
Subject: Re: request for use of Theories of Intelligence Scale

Dear Kathleen,
You may make use of the scale for the purposes stated in your email. Please let me know if I can be of further assistance.

XXXXXXXXX
Psychology Department
Stanford University
450 Serra Mall, Bldg 420
Stanford, CA 94305
XXXXXXXXXX

On Dec 7, 2012, Chaucer, Kathleen wrote:

Hello. I am an elementary school principal in XXXXXXX, NY and am also working on my dissertation at the Sage Colleges in Albany, NY in their Educational Leadership doctoral program. I will be studying the relationship between leader beliefs, leader behaviors, and the recently released student growth scores for NYS. I was wondering if you might grant me permission to use your Theories of Intelligence Scale as a means of measuring the beliefs (mindset) of the participants in my study (elementary principals in NY).
I previously emailed you from my Sage College email, but also wanted to try to reach you from this account. I truly appreciate your help with this research and would be honored to utilize your scale. I was unable to get a copy of the actual scale (only saw it used in another dissertation), so might you attach a copy, as well?
Thank you and please do not hesitate to contact me with questions.

Kathleen Chaucer