

PREPARING STUDENTS TO BE GLOBALLY COMPETITIVE IN THE 21ST CENTURY:
EXPLORING EDUCATIONAL LEADERS' GLOBAL-MINDEDNESS AND STUDENT
ACHIEVEMENT IN NORTH CAROLINA PUBLIC HIGH SCHOOLS

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ABSTRACT

Susan Elizabeth Sutherland: Preparing students to be globally competitive in the 21st century:
Exploring educational leaders' global-mindedness and student achievement in North Carolina
public high schools
(Under the direction of Dana Thompson Dorsey)

As globalization asserts a greater presence in our society, schools are faced with ensuring their structure and curriculum are preparing students for the demands of living and working in a new, expanded economy. Schools must prepare students to succeed through an infusion of 21st century skills, while also preparing them to be able to compete and collaborate at an international level. Although teachers have daily and direct contact with students, it is the principal's leadership that provides the vision and focus for the school. The principal's role in initiating and/or sustaining a successful global focus is pivotal to student success; thus, a principal's global-mindedness is potentially a critical factor. According to Hett (1993), high levels of global-mindedness emphasize the development of responsibility, awareness, and appreciation based on global, rather than ethnocentric or national standards.

This dissertation examines the relationship between global-mindedness in North Carolina public high school principals and student achievement. Using a mixed methods approach that includes a demographic survey, the Global-Mindedness Survey (GMS), and North Carolina school characteristics data, the ensuing study contributes to the research and findings in global-mindedness, student achievement, and educational leadership. The results are intended to have significant implications for school leaders in terms of identifying the attributes and dimensions

necessary for shaping school communities to be better equipped to respond to the challenges and complexities of globalization.

This study identifies several variables associated with a principal's global-mindedness. Namely, a principal's gender, race/ethnicity, and travel experience are most strongly related to global-mindedness. The school size, number of fluent languages, and years in education are marginally associated with global-mindedness. However, this study failed to find an association between a principal's global-mindedness as quantified by the GMS and student achievement.

Additionally, this study found that principals are still developing their conceptualization of global awareness in the 21st century. The analysis demonstrated the principals' conceptualization was largely grounded in theory rather than experience. There is much work needed to assist these educational leaders in developing/increasing their global-mindedness and the requisite skills to help translate theory into practice.

This dissertation is dedicated to my mom who has always given me an abundance of love.

If you can dream it, you can do it.
-Walt Disney

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TABLE OF CONTENTS

LIST OF TABLES.....	x
LIST OF FIGURES	xii
Chapter 1: Introduction to the Study.....	1
Background.....	1
Statement of the Problem.....	5
Purpose of the Study	6
Significance of the Study	7
Conceptual Framework.....	8
Research Questions.....	11
Definition of Terms.....	11
Assumptions.....	12
Delimitations.....	13
Limitations	14
Summary	15
Organization of the Research.....	15
Chapter Two: Literature Review	16
Globalization.....	16
Workforce Trends in the 21 st Century Global Economy	19

International Comparisons in Education.....	23
Conceptual Framework for 21 st Century Skills	27
History of the School Principal.....	37
Principals' Impact on Student Achievement.....	39
The Task of the Principal in the 21 st Century	45
The Development of Hett's Global-Mindedness Scale	50
Findings from Subsequent Research Using Hett's Global-Mindedness Scale	54
Selected Demographic Factors as Potential Confounders or Effect Modifiers for this Study..	59
Selected School Characteristics as Potential Confounders of Effect Modifiers for this Study	63
Chapter Three: Methodology	82
Research Questions and Hypotheses	84
Participant Sample and Data Collection	86
Protection of the Subjects	88
Research Instruments	89
Internal Consistency, Reliability and Validity of the GMS	91
Student Achievement.....	92
Data Collection and Analysis Methods.....	94
Statistical Analysis Plan.....	101
Summary	110
Chapter Four: Data Analysis.....	111
Measurement Tool	112
North Carolina School Demographics	115
Response Rate.....	117

Population and Demographic Analysis.....	117
Research Questions.....	120
Summary.....	157
Chapter Five: Discussions and Recommendations.....	162
Overview of Study.....	162
Conceptual Framework.....	164
Review of Methods.....	165
Discussion of Research Findings.....	165
Implications and Recommendations for Educational Leaders.....	189
Limitations and Recommendations for Future Research.....	195
Conclusion.....	198
Appendix A: Partnership for 21 st Century Skills Framework.....	202
Appendix B: Future-Ready Students: Goals for the 21 st Century.....	203
Appendix C: Characteristics of Global-Mindedness.....	204
Appendix D: Hett’s Global-Mindedness Scale (GMS).....	206
Appendix E: North Carolina Standards for Schools Executives (Principal Evaluation).....	214
Appendix F: TIMSS 8 th Grade Math Report.....	221
Appendix G: TIMSS 8 th Grade Science Report.....	223
Appendix H: Principal Background Questionnaire.....	225
Appendix I: GMS Scoring Key.....	227
Appendix J: GMS Permission.....	234
Appendix K: Understanding the ACT Scores.....	235
References.....	236

LIST OF TABLES

Table 1. <i>Data Sources</i>	87
Table 2. <i>Five-Factor Reliability Analysis of Hett’s Global-Mindedness Scale</i>	92
Table 3. <i>Data Description</i>	113
Table 4. <i>Profile of NC High Schools and of Respondents</i>	116
Table 5. <i>Descriptive Statistics for NC High School Principals Responding to Survey</i>	118
Table 6. <i>Total Global-Mindedness Scores Among NC High School Principals</i>	121
Table 7. <i>Emergent Themes and Definitions</i>	123
Table 8. <i>Frequency of Responses to Question 1A</i>	125
Table 9. <i>Frequency of Responses to Question 1B</i>	128
Table 10. <i>Global-Mindedness Scores by Global Awareness Scores</i>	131
Table 11. <i>Association Between Global-Mindedness and Student Achievement</i>	137
Table 12. <i>Association of Total Global-Mindedness Scores Among NC High School Principals with School Characteristics</i>	139
Table 13. <i>Association of Total Global-Mindedness Scores Among NC High School Principals with Principal Characteristics</i>	140
Table 14. <i>Association of Student Achievement with School Characteristics</i>	141
Table 15. <i>Student Achievement by School Locale</i>	142
Table 16. <i>Association of Student Achievement (ACT) with Principal Characteristics</i>	142
Table 17. <i>Association of Student Achievement (EOC) with Principal Characteristics</i>	144
Table 18. <i>Association of Student Achievement (Graduation Rates) with Principal Characteristics</i>	145
Table 19. <i>Summary of Statistically Significant and Trending Univariate and Bivariate Analyses</i>	146

Table 20. <i>Bivariate Correlations with Potential Regression Variables</i>	147
Table 21. <i>Regression Results for ACT Composite Scores Presented as Standardized Coefficients</i>	150
Table 22. <i>Regression Results for ACT Composite Scores Restricted to White Principals</i>	151
Table 23. <i>Regression Results for EOC Composite Scores Presented as Standardized Coefficients</i>	153
Table 24. <i>Regression Results for EOC Composite Scores Restricted to White Principals</i>	154
Table 25. <i>Regression Results for Graduation Rates Presented as Standardized Coefficients</i> ...	155
Table 26. <i>Hypotheses Testing</i>	157
Table 27. <i>Summary of Bivariate Associations with Independent and Dependent Variables</i>	160
Table 28. <i>Regression Summary: Significant Predictors of Student Achievement</i>	161

LIST OF FIGURES

<i>Figure 1: Theoretical Framework</i>	9
<i>Figure 2: Annual Expenditure per Student by Educational Institutions, by Type of Service</i> <i>(2010)</i>	27
<i>Figure 3: enGauge Framework</i>	28
<i>Figure 4: The Asia Society’s 21st Century Framework</i>	30
<i>Figure 5: OECD DeSeCo Framework Student Outcomes - How Collective Competencies Affect</i> <i>Society</i>	32
<i>Figure 6: DeSeCo Competencies</i>	33
<i>Figure 7: Partnership for 21st Century Skills Framework</i>	34
<i>Figure 8: Triangulation Design: The Convergence Model</i>	102
<i>Figure 9: Total Global-Mindedness Scores Among NC High School Principals</i>	122
<i>Figure 10: Frequency of Global Awareness Scores</i>	132
<i>Figure 11: Global Mindedness Scores Compared to Global Awareness Scores</i>	133

Chapter 1: Introduction to the Study

Background

Survival in an interdependent, global world requires specialized skills and knowledge. Furthermore, because students will most assuredly compete in a global job market, public K-12 schools must provide students with the requisite skills for jobs that do not exist at this point in time, but will become prominent in the near future. While predicting the exact jobs that will emerge in the future is difficult, it is clear from examining the employment trends that a myriad of current jobs did not exist ten years ago, and that trend will most assuredly continue. Examples of recently created jobs include social media/online community manager, sustainability manager, and user experience manager (Kiplinger, 2011). Additionally, factors such as rapid technological innovations and the rise of a knowledge economy— forces that occur under the umbrella of globalization— are pressuring educational leaders, and others in field of education, to respond to private industry (Nam & Park, 2014).

At a macro-level, education has responded to these global forces, and evidence of this response manifests itself in schools via state and federal education policies and initiatives. Education macro-responses to global demands include the enhanced integration of technology in the classroom and modified curriculum expectations (Nam & Park, 2014). For example, Partnership for 21st Century skills, an organization advocating not only 21st century skills but also global competitiveness, offers an illustrative example of globalization's infusion into the realm of public education (Partnership for 21st Century Skills, 2011). The organization places an

emphasis on four essential skills students need to succeed in the 21st century: collaboration, problem solving, technology integration, and global awareness (see Appendix A). The skills promoted by Partnership for 21st Century Skills are mirrored in the North Carolina statewide principal evaluation instrument, which requires that school leaders infuse global awareness into curriculum and incorporate such skills as collaboration and critical thinking into classroom instruction (North Carolina State Department of Education, 2013; Partnership for 21st Century Skills, 2011).

The curriculum response designed by education policy makers at the macro-level, as described above, results from a conglomeration of factors that contribute to a perceived sense of urgency to restructure education policy. For instance, due to regional and geo-political factors, the labor market has expanded beyond localities so that workers now compete with each other on a global scale, not just at the regional or local level (Freeman, 2006). Furthermore, as a result of rapid technological advancements – an integral aspect of globalization – the world is now more interconnected, competitive, and collaborative (Friedman, 2007). Yet, even as the job market has globalized, international academic achievement indicators reveal that American students are not prepared to compete in this global context (Program for International Student Assessment, 2012).

The Program for International Student Assessment (PISA) measures reading literacy, mathematics literacy, and science literacy for 15-year-olds, every three years (Program for International Student Assessment, 2012). American students, when compared to their Organization for Economic Cooperation and Development (OECD) counterparts on the 2009 PISA results, rank 23rd in reading, 36th in math, and 27th in science (Program for International Student Assessment, 2012). Additionally, data from the Progress in International Reading

Literacy Study (PIRLS) in 2011 reveal that while the scale score for American students of 556 is significantly above the PIRLS average of 500, it lags behind the top performing nations by approximately 15 scale score points (Institute of Education Sciences, 2011). For a nation with a GDP over \$16 trillion – which ranks number one in the world (Central Intelligence Agency, 2013) – American public school students are not performing at a level commensurate with the wealth potential of their nation. Ultimately, the sense that American students lack the skills to compete against international students supports the narrative mandating structural changes to the education system.

The public school system in the United States has experienced several waves of school reform throughout the years such as the effective schools movement, school restructuring, systemic reform, and comprehensive school reform. Since, school principals have become the focus of policy makers, and therefore the expectation had become that these school leaders increase student achievement (Waters, Marzano, & McNulty, 2003). This increased accountability has resulted in principals assuming a greater degree of responsibility for student achievement than in the past (Zepeda, 2007).

Throughout the United States, school principals are subjected to increasingly high demands for student accountability. This demand for accountability holds the principal ultimately responsible for student achievement (Gruenert, 2005; Lashley, 2007; Praisner, 2003). Principals seek ways to positively affect student achievement scores in order to meet today's demands. In doing so, they have turned their attention to strategic ways in which students' academic performance can be increased. Under the pressures and mandates of federal legislation, principals are asking themselves what specific leadership practices affect student achievement (Marzano, Waters, & McNulty, 2005). Research reports that principal leadership is

one of the most significant factors affecting student achievement, and this in turn indicates principals must have a thorough understanding of the skills and behaviors needed to be effective leaders in the 21st century (Leithwood, Louis, Anderson, & Wahlstrom, 2004; Marzano et al., 2005).

As globalization asserts a greater presence in the realm of education, schools must modify their structure, curriculum, and academic focus to prepare students for the demands of the new economy. In the current globalized environment, schools should prepare students to succeed at an international level through an infusion of 21st century skills, while also enlightening students so that they can compete and collaborate at an international level. While teachers have daily and direct contact, it is the principal's leadership and vision that provides the impetus and focus for those teachers. Given that research names the principal as a critical player in determining the success of any program within the school (Marzano et al., 2005), certainly his or her role in initiating and/or sustaining a successful global focus within the school will be pivotal to student success.

It was with this in mind that the North Carolina State Board of Education revised its guiding mission in 2008 to state, "Every public school student will graduate from high school, globally competitive for work and postsecondary education and prepared for life in the 21st century" (North Carolina State Board of Education, 2008, p. 1). This revised document, referred to as *Future-Ready Students: Goals for the 21st Century* (see Appendix B), also stated that 21st century leaders should govern North Carolina public schools in order to achieve its mission as stated above (North Carolina State Board of Education, 2008). Principals today are called upon to be those change agents, to provide the leadership and vision for instructional change within

the school. Thus, a principal's global-mindedness will be a critical factor in determining any global focus that is initiated or sustained within the school.

Statement of the Problem

The current world for preparing youth is exceptionally different from the industrial world in which the public school system was created. In recent decades, numerous reports and policy statements have emphasized the need for new skills in the 21st century. Partnership for 21st Century Skills established a list of these skills and engaged a growing movement to embed them in the K-12 curriculum (Partnership for 21st Century Skills, 2011). They include research and technology, communication and collaboration, and problem solving and critical thinking skills. In other words, the current approach advocates for infusion of global thinking and principles into education whereby educators nurture students' substantive understanding of, and action in, our increasingly complex, diverse, and interdependent world.

Educational leaders are struggling to keep up with the pace of change as new challenges arise related to how to best prepare students to be knowledgeable, compassionate, active, and responsible citizens in a globally, interconnected society. With this in mind, conversations related to the preparation of students for the 21st century have come to the forefront of social, economic, political, and cultural agendas. If educational leaders are to be seen as responsive and active participants, and if real change in education is to occur, then an understanding of the perspectives, skills, characteristics, and mindsets needed for life in a global world must be identified and understood.

Given the critical role principals play in sustaining and developing a vision and promoting change within a school community, it is essential to examine global-mindedness as it relates to educational leadership. Past research has focused on global education in various

forms. Hanvey (1976) identified five dimensions related to global perspectives: perspective consciousness, state of the planet awareness, cross-cultural awareness, knowledge of global dynamics, and awareness of human choices. Other researchers including Anderson (1982), Lamy (1983), Torney-Purta, (1982), and Tucker (1982) studied global education in the classroom and in teacher education programs. Taking global education further, Hett (1993) coined the term global-mindedness (see Appendix C) and designed an instrument to measure it (see Appendix D).

Hett's (1993) research and findings, as well as the findings of subsequent studies employing the Global-Mindedness Scale (GMS) have significant implications for school leaders in terms of identifying the attributes and dimensions necessary for shaping school communities better equipped to respond to the challenges and complexities of globalization. If principals are expected to develop a global educational context, they must be able to demonstrate the values and understandings necessary to manage the forces of continuity, change and inequality that are being exacerbated by globalizing forces. However, little is known about the impact of a principal's level of global-mindedness on student achievement. Given the lack of empirical study of this relationship, more research is needed.

Purpose of the Study

The purpose of this study is to investigate the levels of global-mindedness of principals in North Carolina public high schools and the potential relationship of global-mindedness to student achievement. The principal is often identified as an essential element to the development of school culture—nurturing the traditions, ceremonies, rituals, and symbols that express and reinforce the overall mission and purpose of a school community (MacBeath & Dempster, 2009). Therefore, to facilitate development of global-mindedness within the context

of leadership and education, the perspectives of school leaders and the relationships that may exist across and between the dimensions of global-mindedness need to be elucidated.

This study's investigation of the global-mindedness of principals is predicated upon Hett's (1993) research, which was spurred by the educational imperative of fostering the development of a global perspective in university students. Hett's research and identification of the five dimensions of global-mindedness (responsibility, cultural pluralism, efficacy, globalcentrism, interconnectedness) draws upon a substantial field of study related to the development of a global perspective and has been replicated on several occasions within a variety of contexts, including public K-12 education. The extensive research conducted by Hett and subsequent studies employing the GMS (Acolatse, 2010; Carano, 2010; Cogan and Grossman, 2009; Duckworth, Walker-Levy, and Levy, 2005; Gillian, 1995; Kehl and Morris, 2008; Kirkwood-Tucker, Morris, and Lieberman, 2011; Smith, 2008; Walton, 2002; Zhai and Scheer, 2004; Zong and Farouk, 1999) support the use of the GMS in this study. It is the intent of the researcher to explore the differences across the dimensions of global-mindedness as identified by Hett (1993) for high school leaders and to investigate the association of these dimensions with student achievement. This research will provide information that does not currently exist on the global-mindedness of high school leaders and its potential link to student achievement as measured by students' composite ACT scores, EOC composite scores, and school graduation rates.

Significance of the Study

Research suggests the leadership process is multifaceted and intertwined with its larger environment, ranging from the community to the larger society (Bottery, 1999; Heck, 2002). This influence is multidimensional and easy to overlook; however, it is the nexus between

leadership and cultural or contextual influences that can lead to improvement in its practice (Dimmock & Walker, 2005; Hallinger, 2005). These ideals support the need for a study of the relationship between the global-mindedness of educational leaders and student achievement in order to understand the development of the knowledge, skills, and attitudes that are essential to preparing students for life in a globally interconnected world.

This call for a global-minded approach to education emphasizes the need for investigating global-mindedness as an essential leadership skill or attribute. It is the intent of the researcher to add to the body of knowledge about effective educational leadership in order to ensure a relevant 21st century education that addresses the complex, multidimensional processes of globalization and issues related to diversity, inequality and interconnectedness (Cambridge & Thompson, 2004; Walker, 2008).

Conceptual Framework

The conceptual framework for this study (See Figure 1) draws upon Partnership for 21st Century Skills framework and several North Carolina state documents: the North Carolina State Board of Education's mission and vision (Future-Ready Students initiative), and the North Carolina Standards for School Executives (North Carolina Department of Instruction, 2006; North Carolina State Board of Education, 2008). In addition, the study includes the concept of global-mindedness as defined by Hett (1993).

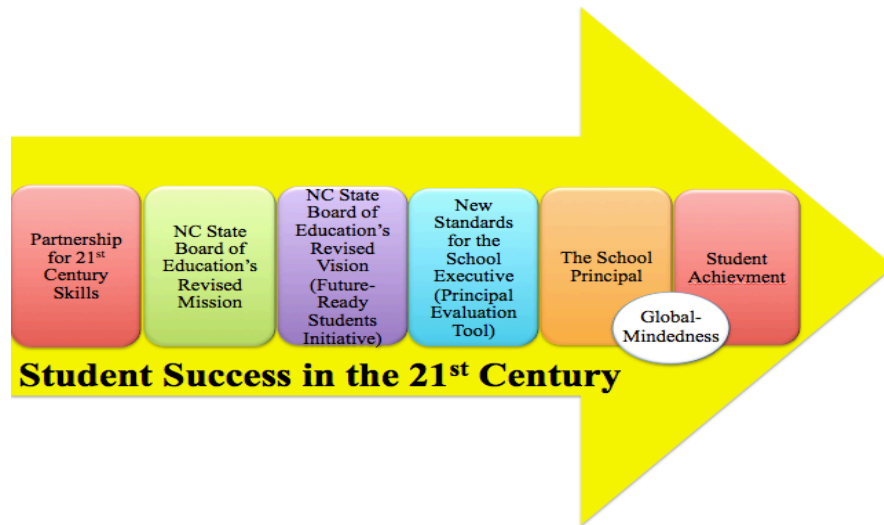


Figure 1: Theoretical Framework

Partnership for 21st Century Skills framework. Partnership for 21st Century Skills (2011) has been a major influence in American education. The organization identified four key elements of 21st century learning including core subjects and 21st century themes; learning and innovation skills; information, media, and technology skills; and life and career skills (Partnership for 21st Century Skills, 2011). The skills outlined by Partnership for 21st Century Skills are the competencies that all administrators must ensure teachers are providing to students in order for them to become successful workers in the new information age. The content that all schools should incorporate into the curriculum are: global awareness (promotion of understanding and tolerance of diversity), civic awareness (understand, analyze and participate in government, locally and globally), financial and economic literacy (understanding the choices for personal success) and health literacy (understanding nutritional choices that will allow for a long life) (Partnership for 21st Century Skills, 2011).

North Carolina State Board of Education's mission and vision. In 2006, The North Carolina State Board of Education adopted Partnership for 21st Century Skills framework to

bring about the infusion of 21st century skills across the curriculum in North Carolina (North Carolina State Board of Education, 2008). The framework was then used to rewrite the State's mission: "Every public school student will graduate from high school, globally competitive for work and postsecondary education and prepared for life in the 21st century" (North Carolina State Board of Education, 2008, p. 1).

The Board felt as though this new mission required a new vision of school leadership, and therefore developed North Carolina's "Future-Ready Students" initiative. This statewide vision framed the collaborative efforts between education, business, and community leaders to improve teaching and learning, and to inform North Carolina's 21st century skills work in standards, professional development, curriculum, and assessment (North Carolina State Board of Education, 2008).

North Carolina Standards for School Executives. After developing a mission and vision that reflected the needs for students in the 21st century, the Board then wrote a new set of standards (see Appendix E) to guide school leaders (North Carolina Department of Instruction, 2006). In December of 2006, the North Carolina State Board of Education approved the "North Carolina Standards for School Executives"—a new set of standards that placed 21st century learning at the forefront (North Carolina Department of Instruction, 2006).

Global-mindedness. Hett (1993) defines global-mindedness as "a worldview in which ones sees oneself as connected to the world community and feels a sense of responsibility for its members. This commitment is reflected in an individual's attitudes, beliefs and behaviors." (p. 143) According to Hett (1993), global-mindedness consists of five dimensions: responsibility, cultural pluralism, efficacy, globalcentrism, and interconnectedness.

A person with high levels of global-mindedness shares a deep concern for people in all

parts of the world, and feels a moral responsibility to try to improve conditions. People who are globally-minded believe they can individually have an impact on the world, and that each individual has something to offer. They have a strong sense of appreciation of diversity and differences and an awareness and appreciation for the interconnectedness of the world (i.e. global awareness). This study will explore the relationship, if any, between global-mindedness in North Carolina public high school principals and student achievement.

Research Questions

The three primary questions addressed in this study are:

- Q1: What is the level of global-mindedness among NC public high school principals?
 - a. How do principals view their roles in promoting global-mindedness?
 - b. What have principals done to support global-mindedness?
 - c. How do the principals' viewpoint and actions relate to their level of global-mindedness?
- Q2: Is the principals' level of global-mindedness, including the total score and each dimension, associated with student achievement in NC public high schools?
- Q3: Do other factors influence the association, or lack of association, between global-mindedness and student achievement?

Definition of Terms

There are some operational definitions of concepts that are critical to understanding this research. They are as follows:

- Cultural Pluralism: An appreciation of the diversity of cultures in the world and a belief that all have something of value to offer. This is accomplished by taking pleasure in exploring and trying to understand other cultural frameworks (Hett, 1993, p. 143).

- Efficacy: A belief that an individual's actions can make a difference and that involvement in national and international issues is important (Hett, 1993, p. 143).
- Global Education: An education that opens people's eyes and minds to the realities of the globalized world and awakens them to bring about a world of greater justice, equity and human rights for all (The Maastricht Global Education Declaration, 2002, p. 67).
- Global Educational Leader: An educator who feels it is important to incorporate a global perspective into curricula using pedagogy that engages learners in real-world issues with a goal of enhancing students' learning, academic performance, and workforce preparation (Hett, 1993, p. 143).
- Global-mindedness: A worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members and reflects this commitment through demonstrated attitudes, beliefs, and behaviors (Hett, 1993, p. 143).
- Globalization: A multidimensional phenomenon that employs a process approach which intensifies and connects global flows of knowledge, power, economy, technologies, people, values and ideas across borders with a variety of affects (Cohen & Kennedy, 2000).
- Interconnectedness: An awareness and appreciation of the interrelatedness of all peoples and nations, which results in a sense of global belonging or kinship with humankind (Hett, 1993, p. 143).
- Student achievement: Measurable outcomes of student learning.

Assumptions

Within the context of globalization, countries around the world are responding to macro forces that impel educational institutions to educate youth to be competitive in the global

marketplace. Under this type of competitive pressure, the United States has subscribed to neoliberal economic policies, which support the privatization of public entities (i.e. public schools) and the deregulation of private industries (Friedman, 2007). Consequently, these types of policies encourage systems to use education as the means to employment, not for the pursuit of knowledge or critical thinking skills.

This current reality describes the foundation for this study's measure of student achievement. Essentially, the global pressures that drive nations to compete are also creating standardized ways to measure the success. The United States has fallen to this pressure and therefore requires state agencies, schools, and school leaders to track progress through the use of achievement tests, course completion, and other standardized measures. Therefore, it is an assumption of this study that the three outcome measures chosen (ACT composite score, EOC composite score, and graduation rate) are appropriate in measuring student success. The state of North Carolina uses these measures in various ways: to conduct principal evaluations, to measure school success, and to study trends and gain insights (North Carolina State Board of Education, 2008). In the case of this particular research study, this assumption was integral in examining the relationship between a principal's global-mindedness and student achievement.

Delimitations

A delimitation of this study exists in the researcher's decision to emphasize the development of global-mindedness within the context of North Carolina high school education; this study does not address the perspectives of elementary, middle, and higher educational institutions. In addition, the researcher made a decision to focus primarily on quantitative measures, with the intent to explore principals' global-mindedness at the school level using qualitative methods. Quantitative methods allow for testing hypotheses with an ultimate aim to:

(1) make generalizations to a population; (2) quantify the level of association between achievement and each component of the Global-Mindedness Survey; and (3) control for confounders and identify effect modifiers. This research also explores characteristics of high versus low global-mindedness through qualitative assessments, thus utilizing mixed methodology to assess potential relationships.

Limitations

The researcher will attempt to minimize the limitations, but if the resulting sample size is small, there will be some limitations that may affect the ability to generalize this study to other educational leaders and school districts. Additionally, the participants' awareness of the study may influence their answers and thus may distort the findings of the study. Another limitation is, due to convenience, the findings will be limited to educators in North Carolina; therefore, results may not be generalizable to educational leaders in other states. Another limitation involves the selection of the GMS and the acceptance of the five dimensions of global-mindedness as the foundation for this study. The GMS inspires some level of social desirability, especially during times of war or global conflict (Hett, 1993), which may have some minor effect related to reported scores on the GMS (items 1-30). It is also important to note that while Hett's (1993) GMS provides data on behaviors, attitudes and values that have implications for school leadership, the instrument asks principals to respond as individuals, not in their role as school leaders. Additionally, the GMS does not directly measure leadership challenges, global complexities, political climates, or the roles that schools or school leaders themselves play in globalization processes. However, this limitation may be mitigated by the inclusion of qualitative methods.

Summary

In these times of increased concern for student achievement, the increased accountability on schools prompts principals to focus on various leadership skills. School principals are being held accountable not only for the structures and processes they establish, but also for the performance of their students (Leithwood & Riehl, 2003). Leithwood et al. (2004) maintain that leadership is key to improving student learning.

The potential benefit of this research identifying the relationship between principals' levels of global-mindedness and student achievement will be useful to practitioners, as it could be used to outline specific leadership behaviors necessary to impact school improvement. Results of this study will add to the school leadership literature and may be used to enhance principal preparation programs as well as district and state staff development initiatives for school administrators. In summary, the merit of this study is its attempt to move beyond general leadership theories by examining the impact of certain aspects of principal behaviors on student achievement.

Organization of the Research

Chapter One has presented the introduction, statement of the problem, purpose of the study, significance of the study, theoretical framework, research questions, definition of terms, delimitations, limitations, and summary. Chapter Two presents a review of related literature and research pertaining to the study. The methodology is further explained in Chapter Three. The results and analysis of the research are included in Chapter Four, and Chapter Five contains a summary of the findings, conclusions from such findings, and a discussion and recommendations for further study.

Chapter Two: Literature Review

The purpose of this research is to examine the level of global-mindedness within the leadership of North Carolina public high schools and its relationship to student achievement. This chapter includes a review of the literature that introduces the concepts related to globalization, global education and 21st century skills. The past and present role of the school principal are identified and explored as it relates to student achievement. Additionally, the five dimensions of global-mindedness and their importance to educational leadership will be identified to assist readers with an understanding of the essential elements of this multifaceted approach, which is key to the success of students. Lastly, this study's inclusion of demographic variables and school characteristics are identified and their rationale explained.

Globalization

National lines are blurring, citizens of the world are blending, and the cultures of different peoples are fusing (Langenfeld & Nieberding, 2005; Stewart, 2007). Trade policies, immigration laws, and emerging technologies all contribute to this homogenization of the human population. For example, recent innovations in technology make more detailed information available to more people than ever before. Cable news, instant messaging, voiceover IP services, email, tweets, and blogging are just a few types of technological advances that keep people globally connected and informed. Considerable mobility within and between populations results in greater racial and ethnic diversity, especially within large cities. Immigration and emigration are no longer the remarkable phenomenon they once were.

To be successful internationally, businesses have discovered that they must integrate

activities and coordinate resources across national borders. Kagan and Stewart (2004) expounded upon the interconnected economies of companies and industries, the importance of avoiding cultural missteps to the maintenance of national security, and the need to reduce misinformation. Countries that traditionally have been largely unable to compete on a global economic scale have been thrust to the forefront of business development. For example, India has developed its own accomplished, export-oriented software and IT service industry since the United States began outsourcing many jobs to this low-wage country. These changes have allowed India to increase its wealth and industrial prowess, thus allowing for increased international competition (Friedman, 2007).

Historically, globalization has been predominantly driven by the norms and culture of European and American businesses. However, consistent with the growth and dispersal of current technologies, the emerging face of globalization is changing rapidly from the once dominant Western ideals, to become more *flat*—meaning that there have been major shifts in the world (e.g. wireless technology) that have made it possible for us to connect with the rest of the world much effortlessly (Friedman, 2007). In other words, globalization enables everyone to be a player and take part in shaping of the future. For example, Friedman wrote that in 2004, there were 100,000 American tax returns outsourced to India. In 2005, there were 400,000 outsourced. This number continues to rise each year, indicating that the world is *flattening* out (Friedman, 2007). In his book, Friedman concludes that it would behoove young Americans to think of themselves as competing against every young person in the world. He cautions people to think globally, instead of just in a local context. For students, this means acquiring new, challenging and innovative skills.

Schools are an agency for social change (Fullan, 1993) and, as such, should strive to

foster the development of students to be open-minded and able to think in a global context. Therefore, schools are faced with finding innovative and inclusive methods of instruction. According to the American Council on Education (n.d.), individuals who are able to transition easily across cultural and political boundaries will be exceptionally well placed for success. This will require schools to identify evolving global issues and find inventive and comprehensive methods of instruction.

Kagan and Stewart (2004) call for the deliberate educational preparation of all students, so they can be decisive contributors in an integrated world. They propose educational institutions in the United States shift their paradigm from community concerns to international concerns, from federal and state accountability benchmarks to the skills demanded by the global marketplace.

According to Clarke (2004), established processes to provide for an increasingly diverse society are essential. However, according to Bryan and Vavrus (2005) and Waks (2006), Americans seem unwilling and unable to successfully incorporate new groups into mainstream society. The renowned National Geographic Society (2006) Roper Public Affairs survey, which studied the geographical knowledge and skills of young Americans aged 18–24, brought light to this issue. In the survey, National Geographic Society (2006) found that 63% of people could not locate Iraq on a world map, 74% thought that English was the most commonly spoken language, and 75% did not know Indonesia is a predominantly Muslim nation. In her research, Hett (1993) concludes that individuals, who are sensitive to those differences, respond much better in a global context. Globally-minded people recognize that people from other cultures think, argue, and perceive things very differently (Hett, 1993).

Workforce Trends in the 21st Century Global Economy

The 21st century global economy demands a new kind of worker. Wonacott (2002) uses the term “gold collar” worker to describe the creative and strategic thinkers needed to compete in the global economy of the 21st century. Pink (2005) believes that economic survival will rely on workers’ creative capacity as well as their ability to think unconventionally, question the status quo, and deal with ambiguous situations and problems.

Twenty-first century technological advances bring a demand for highly skilled workers in order to support high productivity. The famous futurist thinker, Toffler (1970), believed that societies are caught up in the “third wave” of industrialization and can look to computer technology as a means to shape a high-wage, high-skill future. Toffler (1970) described this concept when he wrote, “By instructing students how to learn, unlearn and relearn, a powerful new dimension can be added to education.” (p. 271) The meaning in Toffler’s statement is found in the studies conducted by the RAND Corporation, which also asserted that 21st century work requires higher level cognitive skills such as managing, interpreting, validating, transforming, communicating and acting on information (Karoly & Panis, 2004). Non-routine analytic skills such as abstract reasoning and problem solving will be essential in jobs from high-level engineers to mail delivery workers (Karoly & Panis, 2004).

Technological progress increases the demand for highly skilled work, which in turn increases the value for higher education degrees and unique skill sets. Using personal discussions with Chief Executive Officers (CEO) of Fortune 500 companies, Wagner (2008) documents the skills American students need to thrive in this new *flattened* workforce. These business leaders believe that the 21st century workers must encompass the ability to think critically, collaborate, adapt, initiate, communicate effectively, analyze information, and be

imaginative (Wagner, 2008). Wagner's set of survival skills is reflected in many 21st century frameworks, such as the one adopted by the state of North Carolina, Partnership for 21st Century Skills framework (Partnership for 21st Century Skills, 2011).

Building on Friedman's (2007) ideas and on the skills that are needed in the 21st century, a 2008 report "Ensuring U.S. Students Receive a World-Class Education" claims that due to the flattening of the global economy, Americans are losing ground while people from places such as Eastern Europe, India, China, and Brazil are gaining access, and thus gaining ground (National Governors Association, the Council of Chief State School Officers, and Achieve, Inc., 2008). Additionally, the report states, "More jobs are going to the best educated no matter where they live, which means that Americans will face more competition than ever for work." (p. 5) Highly skilled workers can now be found anywhere around the globe, regardless of the business's location. By doing business in this fashion, companies are selecting locations that reflect low cost benefits during the stages of production. With the emergence of technology and information technology careers, workers can now collaborate without physically relocating (National Governors Association, the Council of Chief State School Officers, and Achieve, Inc., 2008).

The demand for highly skilled labor is increasing as well as the need for additional schooling and training to fulfill these positions. Even with the increase in American workers who have post-secondary degrees, according to the United States Department of Labor (2013), the U.S. is still projected to have a shortage of qualified workers for the fastest growing job sectors, which include health care, technology, and the sciences in the years 2012-2022. Forecasting this distressing future, in 2011 The Financial Times stated, "The size of the skills gap [has] not diminished... In fact, manufacturers predict the problem to worsen-suggesting that

the U.S. needs to focus on re-educating the workforce if it is to tackle long-term joblessness.”
(p. 1)

The Levin Institute (2005) rationalizes that this predicted shortage is due to new participants in the international economy, especially from the BRIC countries (Brazil, Russia, India, and China). The rise of the BRIC countries is changing the power dynamics in world affairs. The BRICs are defined as countries at the equivalent stage of economic development, but not yet at the point where they would be classified as more developed (The Levin Institute, 2005). The BRIC stance argues that since the four countries are developing with such rapidity, their combined economies could surpass the collective economies of the current wealthiest countries by 2050. These four countries represent roughly 40% of the world’s population and 25% of global GDP (The Levin Institute, 2005). Virtually unscathed from the recent worldwide financial crisis, these countries are poised for long-term growth (The Levin Institute, 2005).

The BRIC countries offer investors the opportunity for growth. Multinationals worldwide are flocking to these countries, hoping to take advantage of their markets (Goldman Sachs, 2003; The Levin Institute, 2005). For example, in 2010 General Motors sold more cars in China than in the U.S (China Business Review, 2011). By the year 2020, China is expected to become the world’s largest aviation market, and by 2025 it is expected to become the world’s largest luxury good market (Goldman Sachs, 2003; The Levin Institute, 2005). A Goldman Sachs report notes, “The developed world cannot compete with the four BRIC countries in terms of growth and incremental consumption in the decade ahead and beyond” (Goldman Sachs, 2003).

Globally, knowledge industries are increasing in number— with up to 85 percent of new positions created in the 21st century, requiring specialized skills (Bisson, Stephenson, &

Viguerie, 2010). However, in addition to the BRIC countries' influence in the global economy, American college-age adults may be contributing to this worker shortage by not pursuing degrees in mathematics, science and engineering fields, which have potential for high economic growth (Bisson, Stephenson, & Viguerie, 2010). In fact, according to National Science Board (2014), in 2010, more than 5.5 million university degrees were awarded in Science and Engineering worldwide. Students in China earned about 24%, those in the European Union (EU) earned about 17%, and those in the United States earned about 10% of these degrees. This trend is troubling given that jobs in the science and engineering sectors are growing nearly five times faster than other jobs in the marketplace (Friedman, 2007).

This shift in the global economy and changes in technology have impacted the nature of business and work. Florida (2007) describes this innovative new global economy as the creative age. The real challenge is to prepare future workers, our students, to be prepared for these changes (Partnership for 21st Century Skills, 2011). Therefore, the economic health and future of the country depends upon the education of today's youth, which can better equip them to succeed in the 21st century.

In a publication from the Asia Society entitled, "Educating for Global Competitiveness," Mansilla and Jackson (2011) found that in order for students to be competitive and successful workers in today's world, they must "understand key topics of global significance in areas like engineering, business, science, history, ecology, and other domains that may constitute their future work" (p. 2). They further state that students should "deploy and develop this expertise as they investigate such issues, recognizing multiple perspectives, communicating their views effectively, and taking action to improve conditions." (p. xiii) In summarizing the report, Mansilla and Jackson (2011) stated that the goal for today's educators is to prepare students for

a changing world, instantaneous communication and new human relationships in virtual as well as in real worlds.

International Comparisons in Education

The United States is not alone in realizing the importance of preparing students to collaborate and compete in the world. Recently, countries around the globe have seen the rise in initiatives to imbed global principles in their curricula. For example, in a landmark document titled the Maastricht Global Education (2002), representatives of the European Council expanded the global education framework to “open people’s eyes and minds to the realities of the world and awaken them to bring about a world of greater justice, equity, and human rights for all.” (p. 67) From the European Council’s viewpoint, global education is thought to encompass, but is not limited to, education for human rights, sustainability, peace and conflict prevention, interculturality, and citizenship.

In Great Britain, the Department for International Development integrates global development issues into the formal curriculum through the *Global Partnership Schools Program*, linking their schools to schools in Africa, Asia, Latin America, and the Caribbean (British Council, 2013). The *Global Citizen Program* prepares Swedish students, teachers, and school leaders to appreciate and have a deeper connection to countries considered critical to a prosperous future in Sweden (AIESEC, 2013). Partnerships with schools in China and India prepare students for the real-world and its demands, from studying abroad to participating in sustainable development, commercial social responsibility, and economy and finances. In India, global education efforts build on ancient traditions of nonviolence and universal brotherhood. India’s *National Curriculum Framework for School Education* calls for a school curriculum that promotes national identity and unity but also strives to create an awareness of the imperative to

promote peace and understanding between all nations for human prosperity (National Council of Educational Research and Training, 2013). The framework expects global education to be embedded in existing subjects, although particular curricula focusing on social justice and peace have also been recommended (National Council of Educational Research and Training, 2013).

Another international example of educational reform comes from The Royal Society of the Arts (RSA) in Great Britain (Royal Society for the Encouragement of Arts, 2014). This organization responded to the changing demands of the 21st century by launching an educational campaign called *Opening Minds* (Aynsley, Brown, & Sebba, 2012). In 1999, the RSA initiated this framework based on eight years of educational research in teaching specific student competencies. The overarching goals for this educational reform initiative in Great Britain are to prepare young people for the uncertain social and economic demands of the future. The *Opening Minds* framework emphasizes practices and standards that engage students to become lifelong learners (Royal Society for the Encouragement of Arts, 2014). The organization advocates a student-centered approach to learning that integrates educational standards and competencies needed to be successful workers and responsible citizens (Aynsley, Brown, & Sebba, 2012). Competencies such as meta-cognitive skills, citizenship and global awareness are examples of skills the RSA feels are integral for 21st century success. They reaffirm the need for development of a new digital literacy for 21st century learners (Royal Society for the Encouragement of Arts, 2014). Along with the technology skills, the RSA believes that self-directional skills such as managing time and adapting to change as well as high order thinking skills are needed in all school curricula; thus, they offer resources for schools to implement these components in their school organizations (Royal Society for the Encouragement of Arts, 2014).

As these examples illustrate, countries around the world are articulating their global education agendas in alignment with 21st century skills. In its effort to stay competitive with other industrialized nations, the United States has participated in international assessments. The PISA (Program for International Student Assessments) assessed whether 15 year-old students could recall what they learned in science, mathematics and reading, and how well they could apply their knowledge in new situations. In its latest assessment, more than 510,000 15-year-old students from 65 countries participated (Program for International Student Assessment, 2012). The assessment measured literacy in mathematics, reading, science and problem solving and served as a tool to revise and guide new international competency domains. The test's objectives were to measure the aptitude of an individual working in teams, independently and with information tools such as language and technology. In 2009, PISA results ranked the United States 23rd in reading, 36th in math, and 27th in science (Program for International Student Assessment, 2012).

Similarly designed, the Progress in International Reading Literacy Study (PIRLS) is another measure that was developed to assess the reading literacy of fourth grade students around the world. Data from the PIRLS 2011 assessment revealed that while the scale score for American students of 556 was significantly above the PIRLS international average of 500, it lagged behind the top performing nations by approximately 15 scale score points (Institute of Education Sciences, 2011).

In 2011, the Trends in International Mathematics and Science Study (TIMSS) report measured the academic performance of the United States against 55 other participating nations. TIMSS assessed the mathematics and science knowledge and skills of 4th- and 8th-graders internationally (Institute of Education Sciences, 2011). In fourth grade, the U.S. average

mathematics score (541) was higher than the TIMSS scale average of 500. Although the United States was among the top 15 education systems, many other countries scored above the U.S., including Singapore, Korea, Hong Kong-China, Chinese Taipei, Japan, Northern Ireland, and Flemish Belgium. In eighth grade, the U.S. average mathematics score (509) was higher than the TIMSS scale average of 500; however, the United States dropped to be among the top 24 education systems in mathematics. Among the education systems that scored above the U.S. average were Korea, Singapore, Chinese Taipei, Hong Kong-China, Japan, Russia, and Quebec-Canada (see Appendix F).

In fourth grade, the U.S. average science score (544) was higher than the TIMSS scale average of 500. The United States was among the top 10 education systems. Nations with average science scores above the U.S. average were Korea, Singapore, Finland, Japan, Russia, and Chinese Taipei. However, by eighth grade the United States dropped to an average of 525. Countries with average science scores above the U.S. were Singapore, Chinese Taipei, Korea, Japan, Finland, Alberta-Canada, Slovenia, Russia, and Hong Kong-China (see Appendix G).

Although the United States lags behind other industrialized nations in regards to educational achievement, American schools have been exceptionally well funded in comparison to their international counterparts. In 2011, the Organization for Economic Cooperation and Development (OECD) calculated that the United States spent approximately \$15,000 per student, 40 percent higher than the OECD average (Figure 2). Despite spending the most per pupil in public education, student achievement scores, as measured by international tests (PISA, PIRLS, TIMSS), still place American students at a disadvantage.

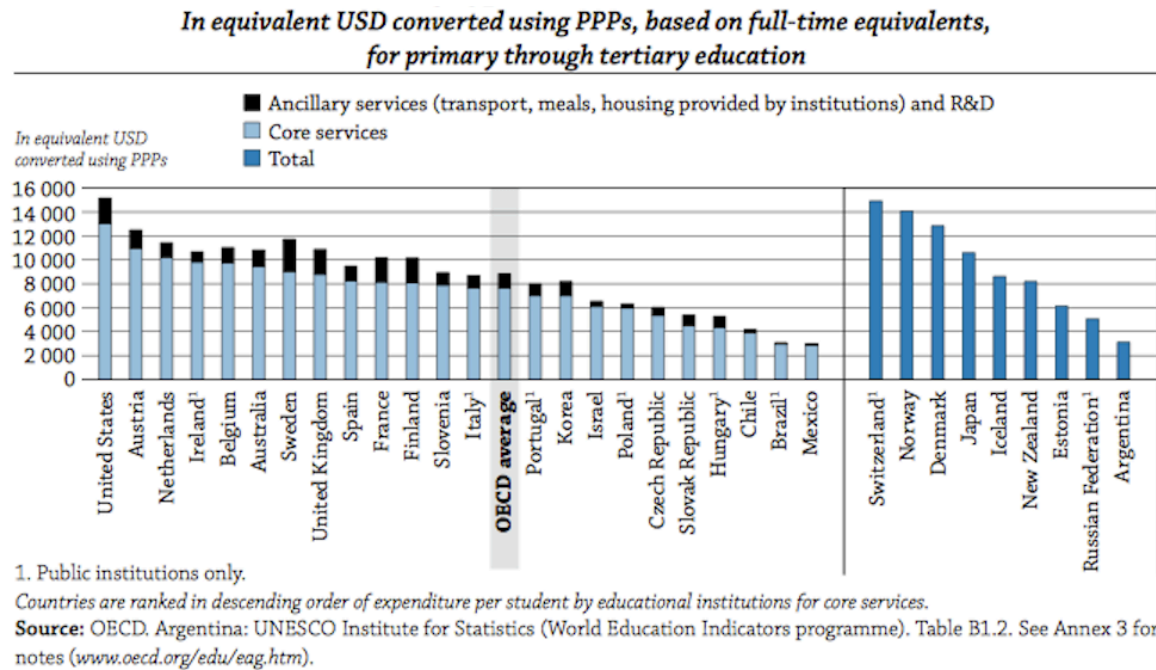


Figure 2: Annual Expenditure per Student by Educational Institutions, by Type of Service
 (2010)

For a nation with a GDP over \$16 trillion, which ranks number one in the world (Central Intelligence Agency, 2013), American public school students are not performing at a level commensurate with the wealth potential of their nation. Ultimately, the sense that American students lack the skills to compete against international students supports the narrative mandating structural changes to the education system.

Conceptual Framework for 21st Century Skills

To prepare students to be successful in the 21st century workforce, several organizations have developed frameworks to help educators incorporate 21st century skills into core academic subjects. The 21st century frameworks to be analyzed in this section are enGauge, Asia Society, Organization for Economic Cooperation and Development's (OECD) Definition and Selection of Competencies (DeSeCo), and Partnership for 21st Century Skills. Because Partnership for 21st

Century Skills conceptual framework was adopted by the state of North Carolina, it was selected as a foundation this study. The following section compares and contrasts the four 21st century frameworks.

enGauge framework. Developed in 2003, the enGauge framework took an important step forward into the digital age (The Metiri Group & NCREL, 2003). Similar to Partnership for 21st Century Skills framework, the enGauge framework focuses on the importance of integrating digital literacy, innovative thinking, communication, and productivity competencies into academic content (Figure 3).

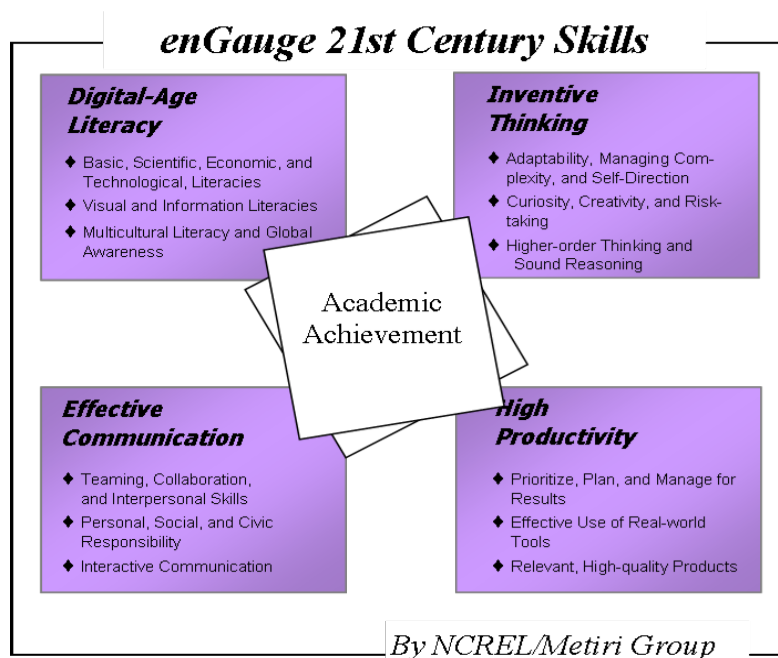


Figure 3: enGauge Framework

The enGauge framework places a great deal of importance on productivity skills, which encompass managing complexities, curiosity, risk-taking, prioritizing, planning and managing for results. This skill set is an important part of 21st century competencies. Unlike Partnership for 21st Century Skills framework, the enGauge framework includes visual literacy as part of

digital literacies. Defined by the organization, visual literacy is the ability to create, use, and interpret visual media to further knowledge, decision-making, communication and learning (The Metiri Group & NCREL, 2003). Although Partnership for 21st Century Skills does not dedicate a specific section to visual literacy, the organization stresses the necessity for students to be digitally literate, and to be able to analyze, apply and create media products (Partnership for 21st Century Skills, 2011).

Asia Society framework. The Asia Society's 21st Century Skills framework (Figure 4) is based on a literacy that is essential for communication and interaction across all boundaries (Asia Society, 2013). Fundamental to this framework is the premise that individuals must learn global competence. The Asia Society (2013) believes that individuals need to be able to acquire and apply knowledge, recognize and consider various perspectives, exchange ideas, and take action. All of these skills are considered to be essential for cultural understanding and social justice.



Figure 4: The Asia Society's 21st Century Framework

The Asia Society (2013) recommends that curriculum be infused with a global focus. Additionally, The Asia Society (2013) recommends collegial collaboration to strategically plan and share resources. This practice reflects a knowledge-based economy, which demands workers to communicate and solve problems collaboratively (Karoly & Panis, 2004).

The use of online resources and service-learning are tools for teaching both local and global issues. Professional use of this technology is an accurate model of what needs to be taught to students to be successful in the 21st century (Karoly & Panis, 2004; Friedman, 2007). This curriculum design reflects the multi-dimensional work environment that Friedman (2007) describes whereby learning is achieved through active, student-centered instruction.

Digital technology skills allow students to investigate the world, recognize and weigh perspectives, communicate ideas with peers in other countries, and take action to improve the world (Asia Society, 2013). These skills include media literacy, which prepares students to determine the accuracy and bias of sources, and digital technology, which demands that students be proficient at nonlinear thinking and multitasking (Friedman, 2007; Karoly & Panis, 2004). Service-learning, travel exchanges and connections with parents and community are further priorities of 21st century learning as defined by the Asia Society (2013).

DeSeCo framework. The DeSeCo framework outlines competencies that are linked and complement PISA (Organization for Economic Cooperation and Development, 2005). Like the other 21st century frameworks, the competencies in this framework relate to knowledge and skills that students must acquire in order to be successful in the 21st century. The DeSeCo competencies, however, stress that the total competencies of combined individuals affect the ability to achieve common societal goals (Organization for Economic Cooperation and Development, 2005). As explained in Figure 5, the DeSeCo framework describes competencies that make individuals successful in their personal, social and work life. These individual actions also contribute to a profitable society (Organization for Economic Cooperation and Development, 2005).

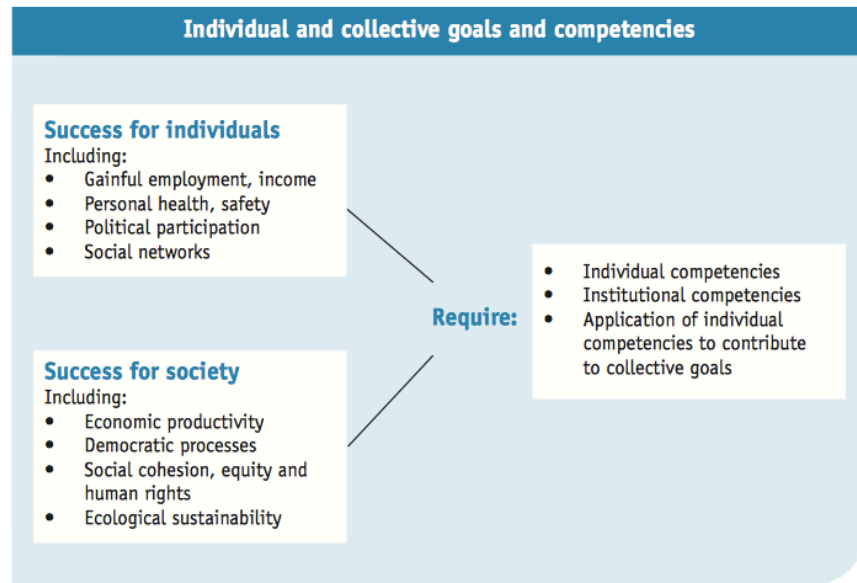


Figure 5: OECD DeSeCo Framework Student Outcomes - How Collective Competencies Affect Society

The DeSeCo framework (Figure 6) categorizes these competencies in three broad categories: communication literacy, social literacy and acting autonomously (also essential components in Partnership for 21st Century Skills Framework). The ability of individuals to use tools, language, symbols and texts interactively is essential under the DeSeCo Framework (Organization for Economic Cooperation and Development, 2005). The ability to interact in diverse groups relates to collaborating and working with others, as well as to managing and being able to resolve conflict in a positive and effective manner. Acting autonomously is a major competency, which includes understanding the larger picture, being able to manage life and personal plans, and the ability to affirm and defend one's own rights, interests, limits, and needs (Organization for Economic Cooperation and Development, 2005).

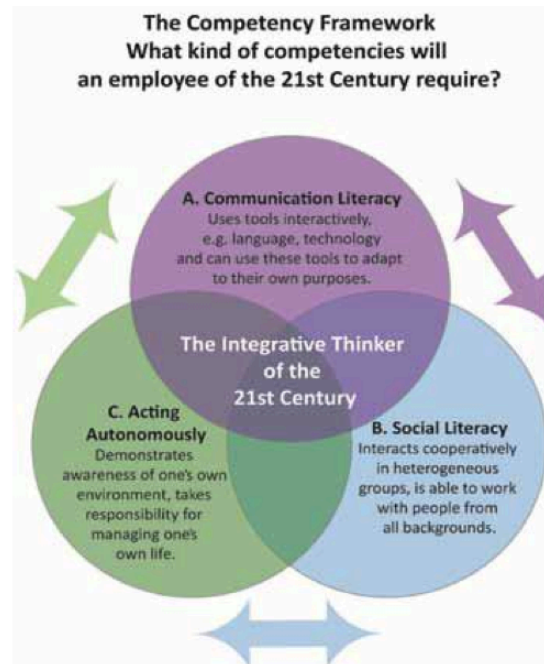


Figure 6: DeSeCo Competencies

Partnership for 21st Century Skills framework. Partnership for 21st Century Skills defines 21st century student outcomes as the knowledge and skills (competencies) that students should learn and understand to be successful in their life and work (Partnership for 21st Century Skills, 2011). Under Partnership for 21st Century Skills framework, 21st century students have to have competencies in core subjects. The core subjects include language arts, world languages, art, mathematics, economics, science, geography, history, government and civics. Furthermore, students must be globally aware and have financial, economic, business, entrepreneurial, civic, health and environmental literacy. These 21st century themes should be woven into the curriculum to promote higher-order learning. To be prepared for the work and life demands of a global world, Partnership for 21st Century Skills believes that students must also possess learning, innovation, creativity, critical thinking, problem solving, communication and collaboration skills. Finally, students must have information, media and technology skills, and

life and career skills to be prepared and be able to meet the demands of a globalized world and economy (Partnership for 21st Century Skills, 2011).

The key elements of 21st century learning in this framework are represented in Figure 7. The image embodies both 21st century student outcomes, represented by the rainbow arches, and support systems, represented by light blue pools at the bottom. Although the 21st century competencies and skills are delineated separately, they are designed to be integrated into content curriculum and academic learning. The critical elements in this framework are the emphasis on core subjects and learning skills; the ability to use 21st century tools; and economic, social and civic awareness (Partnership for 21st Century Skills, 2011).

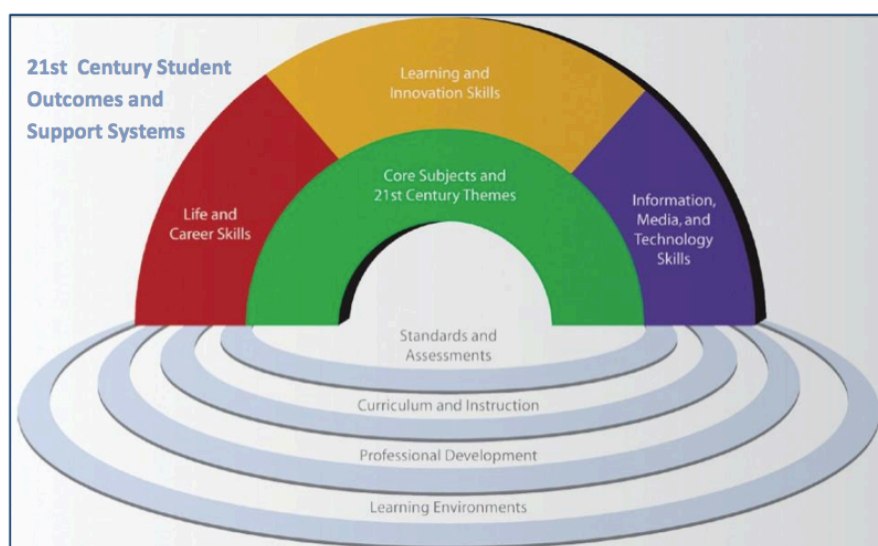


Figure 7: Partnership for 21st Century Skills Framework

Partnership for 21st Century Skills (2011) believes students should master core subjects; however, that mastery should reach higher levels when students can apply the knowledge to real-life scenarios while integrating the 21st century interdisciplinary themes: global awareness;

financial, economic, business and entrepreneurial literacy; and health, civic and environmental literacy (p. 2).

As described by Partnership for 21st Century Skills (2011), a major student outcome is global awareness— being able to work collaboratively and communicate effectively with people from diverse cultures, perspectives, and religions. Furthermore, students must be able to comprehend and sympathize with other nations and cultures. This includes being knowledgeable of global issues and having the initiative to become informed. Researchers, educators and business leaders also propose that, to thrive in life and work, individuals must possess learning and innovation skills (Friedman, 2007; Partnership for 21st Century Skills, 2011; Wagner, 2008).

In 2008, the North Carolina State Board of Education revised their guiding mission to state, “Every public school student will graduate from high school globally competitive for work and postsecondary education and prepared for life in the 21st century.” (p. 1) And by design, the North Carolina State Board of Education embraced Partnership for 21st Century Skills framework in order to bring the infusion of 21st century skills across the state (North Carolina State Board of Education, 2008). Additionally, the North Carolina State Board of Education stated that 21st century leaders should govern North Carolina public schools in order to achieve its mission (North Carolina State Board of Education, 2008). Principals today are called upon to be the change agents, to provide the leadership and vision for instructional change within the school. Given this information, the global-mindedness of the principal will be a critical factor in determining any global focus that is initiated or sustained within the school.

Summary of 21st Century frameworks. As a whole, Partnership for the 21st Century Skills framework is consistent with the enGauge, Asia Society, and DeSeCo frameworks. All

four frameworks place an enormous emphasis on learning, innovation, information, media, life skills, and career skills. The difference is that enGauge, Asia Society, and DeSeCo emphasize some of the skills that Partnership for 21st Century Skills classifies as sub-skills. Partnership for 21st Century Skills, however, delves deeper and specifies 21st century interdisciplinary themes (global awareness, and financial, economic, business, entrepreneurial, civic, health and environmental literacy) as essential components of the framework.

Unlike the enGauge, Asia Society, and the DeSeCo frameworks, the Partnership for 21st Century Skills framework focuses on integrated curriculum, rather than a set of contextual skills (Partnership for 21st Century Skills, 2011). Partnership for 21st Century Skills framework uses the 20th century K-12 core subjects and specifies the integration of 21st century themes into the core content areas. Partnership's framework takes 20th century skills to a higher level where students can apply the knowledge and use it in real-world situations while integrating 21st century skills. Partnership for 21st Century Skills framework shows how students, their ability to apply knowledge using different mediums and environments, and technology work together to accomplish 21st century tasks that otherwise would be unattainable (Partnership for 21st Century Skills, 2011).

As discussed in the previous section, Partnership for 21st Century Skills framework further emphasizes the important elements that support the integration of 21st century skills in the core curriculum. For the skills and knowledge to be implemented, 21st century standards, assessments, curriculum, instruction, professional development, and learning environments have to be aligned to support the 21st century outcomes. Partnership for 21st Century Skills framework offers a holistic approach in preparing students to compete in the 21st century (Partnership for 21st Century Skills, 2011).

History of the School Principal

The emergence of the school principal began in the mid-nineteenth century (Rousmaniere, 2007). With the formation of graded schools in urban areas, a head teacher came into existence to help guide or lead the other teachers in the school. According to Rousmaniere (2007), the lead teacher or principal teacher was the authority in the school who organized curriculum, served as the disciplinarian, and supervised operations of the school. With the continuation of urbanization in the United States, the development of the principal's position continued until majority of urban schools had a principal. However, the role of the principal was different within schools—principals either taught and assumed minor operational duties or served as a clerk with record keeping duties (Rousmaniere, 2007).

From the mid 1800s to the 1930s, the principal had a position of standing and power (Kafka, 2009). Due of the increase of students and teachers, school principals were called to lead the daily operations of schools and given increased managerial responsibilities (McFadden, Maahs-Fladung, Becck-Frazier, & Bruckner, 2009). As schools grew, the duties and responsibilities of principals grew to include finance, personnel, management of the facility, and instructional leadership (Goodwin, Cunningham, & Eagle, 2005). Leading into the 20th century, the principal's role further evolved into administrator, supervisor, instructional leader, and politician (Kafka, 2009).

In the early 1900s, the National Association of Secondary School Principals held their first annual meeting, thereby recognizing the principal position as a legitimate profession (Goodwin et al., 2005; Kafka, 2009). During this meeting, the Report of the National Education Association Commission on the Reorganization of Secondary Education (CRSE) was issued, recognizing the development of secondary education in the United States (Goodwin et al.,

2005). Additionally, the National Education Association established that the principal should hold specific knowledge and skills— these led to the development of professional associations, research studies, and publications (Kafka, 2009).

The report by the CRSE also recognized the principal as the coordinator of all school related activities and ultimately responsible for curriculum, instruction, and all school-related activities (Goodwin et al., 2005). From this point forward, principals were given independence and autonomy by their superintendents and allowed to lead their schools as they deemed necessary (Kafka, 2009).

By the mid 1930s, principals had no teaching duties and were responsible for their own professional growth (Kafka, 2009). In this era, their chief responsibility was to improve and supervise instruction (Goodwin et al., 2005), which included evaluating, hiring, retaining, and firing teachers (Kafka, 2009). Principals were also responsible for building community relations (Goodwin et al., 2005), thus establishing themselves as local community leaders by reaching beyond parents and teachers and involving the community as a whole (Kafka, 2009).

As the United States moved into the latter part of the 20th century, a new era of school effectiveness and accountability underscored the importance of school leadership. Research on effective schools during this era highlighted the importance of the role of the school principal. The principal was the person who oversaw the distribution of resources, supervised programs, communicated legislation, provided instructional leadership, and encouraged collaboration (Usdan, McCloud, & Podmostko, 2000).

Now, in the 21st century, principals have more responsibility and are held more accountable than ever before for the education of all students (Lashley, 2007; Praisner, 2003). Due to the complexity of reform mandates and societal changes, it is essential for schools to

have effective principals as leaders. As educational leaders, principals face the challenge of improving teaching and ensuring academic success for all students. According to Lashway (2003), the role of the principal is rapidly changing from simply encouraging teachers' efforts to leading teachers to produce tangible results.

Principals' Impact on Student Achievement

Existing research supports the notion that school leadership is one of the most important factors for improving student achievement. Researchers at the Mid-continent Research for Education and Learning (McREL) have concluded that effective principals impact student achievement through their leadership practices (Waters et al., 2003). Although teachers play the most vital role in the success of students, leadership is also considered to be a crucial component as it relates to students' academic achievement.

Nicholson and Tracy (2001) suggest that principals have the power and authority to affect change in a school. They argue that leaders are either facilitators or blockers of change in education. This powerful idea implies that principals can either be the lifeline or the ruination of a school. Nicholson and Tracy declare that principals have this power because they have access to both the structure of the organization and the life of the classroom. Principals are required to understand the intricate workings of a school's organization and the way that both the classroom and the teacher impact student achievement.

Further research has shown that principals as leaders are vital in constructing what occurs in a school, and how they lead makes a difference in student performance, school culture, and teacher growth and effectiveness (Maulding et al., 2010; Stephens & Hermond, 2009). Additionally, the principal's leadership has been shown to be a critical factor in influencing student motivation and achievement (MacNeil, Prater, & Busch, 2009; Moore,

2009). According to Moore (2009), a principal's leadership "has a direct effect on school organization, school ethos, teacher efficacy, staff morale and satisfaction, staff retention, teachers' commitment, teachers' extra work, and teachers' attitude," (p. 22) all of which affects student success (Stephens & Hermond, 2009).

Ultimately, it is the principal who is responsible for the success or failure of the school. Although teachers and students both play a role in the school's success, the final responsibility falls on the principal's shoulders. Karhuse (2007) emphasizes this notion by stating, "While teacher quality is vitally important, research increasingly shows that the quality of school leadership is also crucial to student and school performance" (p. 1).

School leaders have also been recognized as the catalyst for instructional changes in schools, and their level of involvement can determine the success of these changes (Bays & Crockett, 2007; Cooner, Tochtermann, & Garrison-Wade, 2004; Riordan, 2003). Waters et al. (2003) describe effective leadership as "balanced" – a matter of knowing when, how, and why to do what needs to be done. In an extensive review of more than 5,000 school leadership studies, Waters et al. (2003) found that an effective principal can have as much as a ten percentile point gain influence on norm referenced tests.

Cotton (2003) identified principals' behaviors related to student outcomes, including achievement. Cotton's synthesis of the research spanned the 1970s to the early 2000s (with a focus on post-1985 research), covering 81 reports that represented an extensive sample, including multiple school contextual variables (e.g. socioeconomic status, school level, ethnicity). A large proportion of studies were from the elementary level and surveyed teachers from high-achieving schools concerning the behaviors of their principals. From the review, Cotton identified 25 leadership behaviors that were consistently acknowledged in the literature

as having a positive effect on student achievement. Examples of these leadership behaviors included the following: high expectations for student learning; self-confidence, responsibility, and perseverance; visibility and accessibility; positive and supportive school climate; communication and interaction; parent and community outreach and involvement; and collaboration. Cotton's influence can be seen in the meta-analysis of Marzano et al. (2005).

In 2005, Marzano et al. conducted a meta-analysis of existing studies on school leadership as practiced by principals. The researchers considered all existing studies on school leadership and principals conducted from 1978-2001, which resulted in quantitative analysis of 69 studies. Overall, their meta-analysis yielded a computed "correlation between the leadership behavior of the principal and the average academic achievement of students in the school to be 0.25" (Marzano et al., 2005, p. 10). In perspective, if a principal with average leadership competence (50th percentile) were leading an typical school (50th percentile), and the principal's ability increased by one standard deviation (from 50th to 84th percentile), the 0.25 correlation would indicate that student achievement would jump to the 60th percentile (Marzano et al., 2005). However, taking the example further, if that average principal's ability jumped to 99%, the 0.25 correlation would indicate that student achievement would jump to the 72nd percentile (Marzano et al., 2005). Based on their meta-analysis, "a highly effective school leader can have dramatic influence on the overall academic achievement of students" (Marzano et al., 2005, p. 10). This meta-analysis led other researchers to conclude that "effective educational leadership makes a difference in improving learning" (Nettles & Herrington, 2007, p. 725). In other words, school principals make a difference in the schools they serve (Marzano et al., 2005).

Leithwood et al. (2004) reviewed three kinds of research studies to determine the effects

of school leadership on student achievement. These studies included qualitative case studies in exceptional school settings (i.e., settings where students achieve significantly above or below expectations), large-scale quantitative studies of direct and indirect effects of school leadership on student outcomes, and large-scale quantitative studies examining specific leadership practices. Based on their research, Leithwood et al. (2004) estimated a correlation range of 0.17 and 0.22 between leadership and student achievement (as cited in Marzano et al., 2005). As Marzano et al. (2005) note, the 0.17 - 0.22 correlation range is very similar to their meta-analysis correlation of 0.25. As a result of their study, Leithwood et al. (2004) determined “that successful leadership can play a highly significant – and frequently underestimated – role in improving student learning” (p. 5). A large amount of the literature reviewed by these authors emphasized the principal’s role in instructional leadership and frequently cited that an effective principal is attuned to his/her own beliefs and values.

Witziers, Bosker, and Kruger (2003) reviewed and selected 37 studies on the direct effects of leadership and student achievement between 1986 and 1996. Witziers et al. (2003) utilized a correlation coefficient to measure the relationship between leadership and student achievement. In contrast to Marzano et al. (2005), Witziers et al. (2003) found a statistically insignificant 0.02 correlation between principal practices and student achievement. In other words, they concluded that there is virtually no relationship between principals (behaviors, practices, and/or responsibilities) and student achievement. Next to the Marzano et al. 0.25 correlation, the Witziers et al. 0.02 correlation yields a minimal increase in student achievement. In review, in the Marzano et al. example, if an average principal (50th percentile) in an average school (50th percentile) improved by one standard deviation (to the 84th percentile), it could be predicted that student achievement would increase 10% to the 60th percentile. Using the same

scenario with the Witziers et al. 0.02 correlation, if an average principal at an average school improved one standard deviation (to the 84th percentile), it could be predicted that student achievement would only increase 1% to the 51st percentile (Marzano et al., 2005). However, Witziers et al. (2003) acknowledged that indirect effects between principals and student achievement could exist.

Seashore-Louis, Wahlstrom, Leithwood, and Anderson (2010) and Marks and Printy (2003) examined the relationship between principal leadership behaviors and student achievement. From survey data of 4,491 teachers in 2005 and 3,900 teachers in 2008 ($n = 106$ schools), Seashore-Louis et al. (2010) conducted a stepwise linear regression between the dependent variable (math proficiency) and the independent variables (focused instruction, professional community, building level, instructional leadership, trust in principal, and shared leadership) to determine if leadership behaviors and attributes (trust, instructional leadership, and shared leadership) were related to student achievement. Correlation analysis revealed that while achievement scores in mathematics were significantly related to focused instruction ($r=0.27$, $p \leq .01$), professional community ($r=0.20$, $p \leq .05$), and teachers' trust in the principal ($r=0.25$, $p \leq .05$), achievement scores were not significantly associated with principal behaviors of shared leadership ($r=0.17$, $p \geq .05$) and instructional leadership ($r=-0.07$, $p \geq .05$) (Seashore-Louis et al., 2010). The regression analysis suggested that when leadership behaviors were added to the regression model, a large increase in variance ($r=0.44$; $r^2=0.19$) for student math proficiency was found. Seashore-Louis et al. (2010) concluded that shared and instructional leadership behaviors, when considered together, had the potential to improve student learning. They also asserted that their findings were complex and in need of further analysis.

Marks and Printy (2003) studied 22 schools, mostly urban, representing various school

levels and enrolling substantial proportions of economically disadvantaged and minority students. Their mixed method research design of teacher questionnaires, site visits, and interviews of teachers and administrators at the school and district level sought to identify the effect of transformational and shared instructional leadership on school performance. School performance was represented by the dependent variables of pedagogical quality and authentic achievement. Pedagogical quality was based on standardized ratings of teachers' scores on classroom instruction and assessment tasks as observed by raters. Authentic achievement was based on student performance in mathematics and social studies on three standards of intellectual quality: (1) analysis, (2) disciplinary concepts, and (3) elaborated written communication. Marks and Printy (2003) found schools that displayed integrated leadership (the coexistence of high levels of transformational and shared instructional leadership) had greater student performance, although they cautioned about generalizing their findings due to the school characteristics of the sample they used.

The studies of Seashore-Louis et al. (2010) and Marks and Printy (2003) grouped instructional leadership with other forms of leadership or as shared behaviors between the principal and teachers. Instructional leadership in schools within these two studies were gathered mostly through teachers (e.g., surveys, interviews, and questionnaires) and largely studied in conjunction with other attributes or behaviors. In addition, these studies failed to connect specific instructional leadership behaviors of the principals that were directly associated with student achievement. For example, Seashore-Louis et al. (2010) found that principals and teachers agreed on the importance of specific principal leadership practices that were identified as helpful in improving teacher instruction without identifying if these practices led to greater student achievement. The leadership practices were analyzed between high- and low-scoring

samples; however, the relatively small sample size of 12 schools (12 principals and 65 teachers) limited the findings.

In reviewing all of these study findings, it is noted that principal behaviors, practices, and/or responsibilities can have a direct or indirect impact on student achievement (Cotton, 2003; Leithwood et al., 2004; Marzano et al., 2005). As stated by Marzano, et al. (2005) and Leithwood et al. (2004), there are significant correlations between principal responsibilities, core practices (and associated behaviors), and student achievement.

The Task of the Principal in the 21st Century

Historically, effective principals only needed to possess sound managerial and political skills (e.g. community engagement). However, 21st century expectations of schools now require different types of leadership skills from principals. In addition to instructional and programming pressures, today's principals also face challenges that include budgetary reductions, school safety, contract administration, supervision, data management, and marketing. Thus, in addition to effective instructional leadership skills, a principal's effectiveness during this new educational era also requires complex knowledge and skills related to organizational culture and management. According to Lashway (2002), this necessitates not just innovative practices, but a different mindset.

Principals serving schools in the 21st century are leading schools with higher academic standards and increased accountability measures. Based on the external pressures initially created by the No Child Left Behind Act of 2001 and sustained through further legislation (Marzano, Waters, & McNulty, 2005), today's principals require a different set of knowledge and skills. The fact that research reports principal leadership as one of the most significant factors affecting student achievement clearly indicates principals must have a thorough

understanding of their roles as leaders. In addition, principals must also have the ability to fulfill each of their roles as leaders by effectively utilizing researched-based practices that can have a positive impact on students.

As societies become more diversified and complex, school leaders must develop a more sophisticated style of leadership and educational management that is better suited to meet the needs of life in a globalized world (Begley, 2002). Educational leaders will be required to demonstrate dimensions of global-mindedness within school communities, regardless of their location. This globally-minded view of education must be an inherent part of school leadership if the United States is to ensure the development of an education that is poised to develop the types of knowledge, skills, attitudes and behaviors necessary to address the complexities and inequalities which occur in an interconnected and interdependent world (Suarez-Orozco & Sattin, 2007; Tye & Tye, 1992; Walker, 2008). These leaders must recognize their primary role of reframing the vision and purpose of a school community by demonstrating the necessary characteristics and attributes for the development of a global perspective of education.

In any instructional setting, the leader has myriad tasks and competencies. Effective educational leaders must be able to react to economic policies and keep abreast of educational issues from many different arenas (Bottery, 2006). Educational leaders are not only accountable to stakeholders at the local level; they must also be able to respond to stakeholders in the international marketplace. This interplay between stakeholders results in increasing anxiety for the educational leader (Bottery, 2006).

Given the myriad of research and understandings related to school leadership, it is important to identify the overarching definition and attributes essential to the development of a global perspective of education. According to Haywood (2002), leadership is the single most

important factor in creating a school's ethos and identity; therefore, there is a need to identify how successful leaders influence schools to develop a globally-minded ethos. An important aspect of schools that is at least partially successful in developing globally-minded curriculum within a variety of cultural contexts is an administrative style that supports and is consistent with the values of the school community (Thompson, 1998). This perspective suggests that school leaders must demonstrate the attributes and dimensions of global-mindedness (such as those identified by Hett, 1993) to foster a global perspective of education within their school. The identification of values provides a focus and serves to define the conscious expressions of what an organization cares about by providing a deeper sense of what is important (Begley, 2002; Deal & Peterson, 1999).

Additionally, the literature related to school improvement processes consistently points to the integral role of the principal and the need for high quality, effective school leadership to ensure organizational improvement and learning (Robinson, Lloyd, & Rowe, 2008; Tye & Tye, 1992). Although the school leader is primarily responsible for the success of transplanting new pedagogy and curricula, one reason for a lack of meaningful, sustainable reform may be that school leaders in general lack the necessary skills and vision to move schools towards a new future. This challenge is further complicated by the finding that the implementation of programs, such as those developed outside of the local cultural context, are generally unsuccessful for reasons also related to the school's leadership (Hallinger & Kantamara, 2000; Morris & Lo, 2000; Villa & Thousand, 2005). This apparent lack of success underscores the need for educational leaders to become more astutely aware of their ideas of global-mindedness that will enhance understandings across cultures and local cultural contexts. In addition, developments of the value-based dimensions of global-mindedness are essential attributes for

school leaders.

North Carolina Standards for School Executive and the Principal Evaluation

Instrument. As society and schools have changed, so have the responsibilities and leadership expectations of educational leaders (Gordon & Patterson, 2006; Marshall, 1993; Marzano, et al., 2005). An abundance of national and state initiatives that address effective leadership have attempted to create contemporary standards for school administrators (Gordon & Patterson, 2006; Reeves, 2004). Recognizing that the success of schools is heavily influenced by the quality of the principal, North Carolina revised its standards for school leaders in order to increase academic achievement and prepare students for a prosperous life (North Carolina State Board of Education, 2008).

In December 2006, the North Carolina State School Board adopted the “North Carolina Standards for School Executives.” These standards were used to create the “North Carolina Principal Evaluation Instrument,” which became effective in the 2008-2009 school year. The intended purpose of the revised document was to “serve as an important tool for principals and assistant principals as they consider growth and development as executives leading schools in the 21st century” (North Carolina Department of Instruction, December, 2006, p. 2).

Currently, all North Carolina public school principals are evaluated using the “North Carolina Standards for School Executives” (North Carolina State Board of Education, 2008). This instrument examines the entire scope of executive leadership at the school level and is focused on 21st century content including global awareness, financial, economic, business and entrepreneurial literacy, civic literacy, and health awareness (North Carolina State Board of Education, 2008). The evaluation serves as a guide for principals as they reflect upon and strive to improve their effectiveness as 21st century educational leaders. This instrument is also

intended to inform higher education programs when developing degree programs for preparing future principals (North Carolina State Board of Education, 2008).

The “North Carolina Principal Evaluation Instrument” is comprised of seven executive standard areas: strategic leadership, instructional leadership, cultural leadership, human resource development leadership, managerial leadership, external development leadership, and micro-political leadership. These critical standards were adopted from a Wallace Foundation Study (2003), “Making Sense of Leading Schools: A Study of the School Principalship” (North Carolina Department of Instruction, 2006). The evaluation process involves seven steps: orientation, pre-evaluation planning (self-assessment), meeting between administrator and supervisor, data collection, mid-year evaluation, performance assessment, and final meeting between administrator and supervisor. As part of the data collection process, school leaders are expected to provide artifacts that demonstrate competency of each of the seven standards. As part of the suggested artifacts, North Carolina Department of Public Instruction recommends that principals provide student achievement data to support their work towards the North Carolina public schools’ guiding mission (North Carolina Department of Instruction, 2006). Therefore, as part of this study, the researcher has chosen to include ACT composite scores, EOC composite scores, and high school graduations rates as measures of student achievement.

North Carolina policy leaders recognize the need for a different kind of knowledge and skills as part of the global shift in the 21st century. Partnership for 21st Century Skills framework (2011) provides direction and focus for creating new standards for administrators. These skills outline the need for students graduating from high school to be able to problem solve, critically think, collaborate, innovate, and be skilled in using technology (Partnership for 21st Century Skills, 2011). In other words, the principals in North Carolina are held responsible

by the State for the preparation of all students for success in the 21st century.

The Development of Hett's Global-Mindedness Scale

In order to prepare students for life in the globalized world, concepts related to world-mindedness and global-mindedness are increasingly important to examine as they relate to educational leaders. Two instruments in particular, the World-Mindedness Scale (Sampson & Smith, 1957) and the Global-Mindedness Scale (Hett, 1993), have attempted to measure this type of mindset. In 1993, Hett coined the term *global-mindedness* and designed a scale to measure it in order to overcome, in her opinion, the antiquated term *world-mindedness* (Hett, 1993). Hett's (1993) instrument was developed to measure, "a worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members" which is "reflected in attitudes, beliefs, and behaviors" (p. 143). The sections below outline the progression that Hett followed in developing the GMS.

Sampson and Smith's model. Sampson and Smith (1957) argued that world-mindedness is defined as a value orientation or frame of reference, aside from an interest in international affairs. A world-minded individual therefore expresses concern for the problems of humanity rather than problems of a specific nation or culture. World-minded individuals are said to consider humankind their principal reference group, rather than identifying with a specific nationality or ethnicity. Sampson and Smith (1957) suggested eight dimensions of world-mindedness: religion, immigration, government, economics, patriotism, race, education, and war.

Several studies of world-mindedness have used this theoretical framework as the basis for research. Crawford and Lamb (1982) investigated the effect of world-mindedness among professional buyers and their willingness to buy foreign products. Participants included 376

professional purchasing agents in the United States who were asked to complete the World-Mindedness Scale (as developed by Sampson and Smith, 1957) in addition to a Likert-type scale measuring willingness to procure foreign products. The participants were then divided into three classifications (high, medium, or low) based on their world-mindedness score. Crawford and Lamb (1982) found a significant effect of world-mindedness on willingness to buy foreign products. Post-hoc analyses showed that meaningful differences existed between all three levels of world-mindedness.

Schell, Sherritt, Lewis, and Mansfield (1986) also applied Sampson and Smith's (1957) World-Mindedness Scale to a business environment. The researchers hypothesized businesses that employed foreign exchange students would have significantly higher world-mindedness scores than their non-hiring business counterparts. Participants were primarily executives of Canadian companies. The results supported the authors' hypothesis and indicated that the average world-mindedness scores for hirers of foreign students were significantly greater than the non-hirers.

Douglas and Jones-Rikkens (2001) used the World-Mindedness scale to assess whether students who had just completed a study abroad program in Great Britain, Germany, China, or Costa Rica demonstrated a higher world-minded attitude than students who had no foreign travel experience. They found that students who participated in study abroad programs had a stronger sense of world-mindedness than students who had not participated.

Barrows' model. Barrows et al. (1981) conducted the Global Understanding Project, and referred to world-mindedness as *global understanding* in their study. Two overarching structures, affective and cognitive components, were examined. The affective component comprised five attitudinal dimensions: (1) chauvinism, (2) world government, (3) war, (4)

international cooperation, and (5) human rights. The researchers also investigated student interests, feelings of worldwide kinship, and concern with regard to global understanding. The cognitive component measured knowledge regarding world affairs, including history, geography, and current events. Barrows et al. (1981) found a positive correlation between the cognitive and affective components; however, there was no significant relationship between global knowledge and foreign language proficiency or extent of formal/informal language study.

Sampson and Smith (1957) and Barrows et al. (1981) suggested that attitudes concerning war, government, and some form of national pride are important elements of a world-minded perspective. Both models focused on attitudes and opinions regarding relevant issues of international concern. Furthermore, both studies shared a common human rights component. Sampson and Smith (1957) divided the human rights component to include distinct subcategories, including religion, immigration, race, and education. Though these models capture an individual's attitude on world-minded events, they fall short by not accounting for personality traits or natural dispositions that some people seem to possess. Both of these studies influenced Hett's (1993) work in the development of global-mindedness.

Hett's model. According to Hett (1993), the dominant ideologies of ethnocentrism and self-interest guided many political decisions during the latter half of the 20th century and seemed to lead humanity closer to destroying or irreparably damaging the planet. Ironically, these themes continue to prevail in the world today and appear to be compounded by the forces of globalization. Through Hett's research, which included a review of a variety of related empirical measures, such as Sampson and Smith's (1957) World-Mindedness Scale, and the Global Understanding Standing Project as developed by Barrows et al. (1981), she proposed a

definition of global-mindedness as “a worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members and reflects this commitment through demonstrated attitudes, beliefs, and behaviors” (p.143).

This definition, identified through Hett’s research and development of a survey instrument to measure the effective components of a global perspective, proposes a multi-dimensional framework that reflects a shared humanity and views the world as an interrelated and inter-reliant community. The definition also advocates for responsible citizenship that considers both local *and* global perspectives and reflects a commitment to service. According to Hett (1993), the five dimensions of global-mindedness are responsibility, cultural pluralism, efficacy, globalcentrism, and interconnectedness. All five dimensions emphasize the development of responsibility, awareness, and appreciation based on global, rather than ethnocentric or national standards.

Through her study to develop an instrument to measure global-mindedness, Hett’s (1993) review of the literature revealed several predictors of students who were more likely to score higher on the Global-Mindedness Scale (GMS): (1) were female, (2) attained junior or senior class standing in college, (3) completed several internationally-orientated courses, (4) regularly read international news, (5) expressed high political interest and liberal political attitudes, (6) activism, (7) interacted with persons from countries and cultures other than their own, (8) showed proficiency in a second language, and (9) spent significant time outside of their own country (p. 148).

After administering the GMS, Hett (1993) found that the results confirmed many of the hypotheses gathered from the literature. Significantly higher scores were found among female students and students enrolled in colleges with a broad internationalized curriculum. Higher

scores were also reported for students who participated in five or more courses with an international focus, who participated in internationally oriented activities, and who possessed liberal attitudes. Students who had friends from other countries and cultures, and those who studied or lived outside the United States for nine weeks or more also scored higher on the GMS. Additionally, Hett (1993) noted that participants scoring higher on the GMS exhibited characteristics also cited in the literature regarding effective educational leaders.

This study's investigation of the global-mindedness of school leaders is predicated upon Hett's (1993) research, which was initiated through the educational imperative of fostering the development of a global perspective in university students. Hett's (1993) GMS is an important indicator of whether school leaders possess the crucial characteristics or dimensions (responsibility, cultural pluralism, efficacy, globalcentrism, interconnectedness) contained in the educational mandates for today's principals. The relationship of these dimensions with student achievement will be explored in this research study.

Findings from Subsequent Research Using Hett's Global-Mindedness Scale

Although very limited evidence exists of the GMS being used within the field of public K-12 educational leadership or outside of the context of the United States, the GMS has been employed through at least eleven studies of global-mindedness across various populations.

Following Hett (1993), Gillian (1995) used the GMS at the University of Northern Colorado to investigate global-mindedness levels of study abroad students, non-study abroad students, faculty, and administrators. Students who studied abroad were found to have higher global-mindedness scores than those who did not. Other significant predictors of global-mindedness were gender, age, and duration of study or travel abroad. Females were on average

more global-minded, and the age range group of 45-54 had the highest mean score for global-mindedness (Gillian, 1995).

Zong and Farouk (1999) conducted a study examining the effects of participation in an internet-based project, the International Communication and Negotiation Simulation (ICONS), on the development of pre-service social studies teachers' global knowledge and global-mindedness using the GMS. ICONS is a world-wide, multi-institution, computer-assisted, simulation network that uses an interdisciplinary approach to teach international negotiation and intercultural communication skills at both the university and secondary school level.

Participants consisted of pre-service teachers registered for a course titled "Developing a Global Perspective in Education: Contents and Methods." The control group took the course a semester earlier. Pre-service teachers in the experimental group communicated with participating country-teams around the world through regular email messages to each other for five weeks. Participants were given a scenario laying out the differing perspectives of countries on seven global issues and were asked to create negotiation strategies, understand the interdependence of international issues, and appreciate cultural differences and approaches to world problems.

Zong and Farouk (1999) found that there was no significant difference in the levels of global-mindedness between the experimental group and the control group after participation in ICONS.

Hett's (1993) and Gillian's (1995) findings related to female gender were also supported by Zhai and Scheer (2004) when using the GMS to study the perspectives of undergraduate agriculture students at Ohio State University. Zhai and Scheer's (2004) overall results indicated a moderate global perspective and a positive attitude toward cultural diversity. When tests for differences between males and females and those with overseas experiences and without were conducted, results showed females had a higher level of global-mindedness than males and a

more positive attitude toward cultural diversity. No significant difference was found between students with prior overseas experiences and those without overseas experience (Zhai & Scheer, 2004).

Walton (2002) examined teachers' global-mindedness, demographic characteristics and instructional classroom communication using the GMS and the Communication Satisfaction Scale designed by Hecht and Ribeau (1984). The research was conducted in D.C. Public Schools, using twelve elementary schools and total of 219 teachers. Walton (2002) found that international travel and global-mindedness were significantly related in the dimensions of responsibility, cultural pluralism, global-centrism, and interconnectedness. The study also found that there was a positive correlation coefficient relationship ($r=0.303$, $p<.05$) between global-mindedness and classroom communication competence, implying that as teachers increased their global-mindedness, their classroom communication competence also increased.

Duckworth, Walker-Levy, and Levy (2005) studied the international-mindedness of ninety pre- and in-service teachers, which included an analysis of beliefs about teaching and learning in international settings. During their study, Duckworth et al. (2005) identified international-mindedness and global-mindedness as synonymous in nature and purpose. Employing Hett's (1993) GMS, the study did not find significant relationships between scores on the GMS and the following factors: gender; age; ethnicity; experience outside the USA; number of countries a teacher had lived in; country of birth; length of time abroad; type of language or number of languages spoken; and length of teaching experience in country of birth (Duckworth et al., 2005).

Kehl and Morris (2008) also employed the GMS to compare the differences in personal characteristics, self-efficacy, and social attitudes between students who participated in short-

term (n=144) and semester long study abroad programs (n=193). This research found that students who had completed a semester in a study abroad program scored significantly higher on levels of global-mindedness than those who only intended to participate in the future.

When investigating the extent of international experience and its effects on global-mindedness among North Carolina extension agents (n=312), Smith (2008) found that females and those with international experience scored higher on the GMS, thereby supporting findings from Hett (1993), Gillian (1995), and Walton (2002). The study also found that participation in international programs increased global-mindedness and that extension agents believed they gained both personally and professionally from these programs and were able to use the international experience in their work at home (Smith, 2008).

Cogan and Grossman (2009) reviewed the literature focused on globally-minded teachers and proposed eight key practices employed by effective teachers. The eight key practices (listed in no specific order) are: (1) supporting the curriculum and developing students' creative thinking; (2) inspiring students to obtain useful information through a variety of media; (3) infusing global perspective in all areas of curriculum; (4) using outside resources and designing cooperative activities with other schools; (5) incorporating community service into the curriculum; (6) upholding the school as a center and integral part of the community; (7) promoting cooperative and experiential learning; and (8) respecting student's thoughts and actions. The researchers summarized that it is critical for higher education institutions to take the responsibility for adding global education to mission and vision statements, to globalize curriculum, and to prepare future globally-minded educators (Cogan & Grossman, 2009).

Using the GMS and the Teacher Multicultural Attitude Survey (TMAS) as data collection instruments, Acolatse (2010) investigated global-mindedness and multicultural

attitudes of 102 teacher candidates in a Mid-Atlantic university. Half of the participants were post-bachelor teacher candidates, and the other half were 5-year teacher candidates. This study indicated that teachers who possessed a bachelor's degree prior to starting their teacher education program scored higher than those without a bachelor's degree in the dimensions of responsibility, cultural pluralism, efficacy, and interconnectedness. Acolatse (2010) further reported that teacher candidates with a bachelor's degree had a more positive orientation regarding diversity issues in the classroom. The research also showed a positive relationship between GMS and TMAS scores. Contrary to Hett's (1993) findings, Acolatse (2010) found that neither gender nor the ability to speak a second or foreign language had an effect on the GMS or TMAS scores. However, age, global courses taken, teaching experience, travelling abroad, and exposure to diversity displayed positive associations with both the GMS and TMAS scores.

Adopting a mixed methods research design, Carano (2010) conducted two separate investigations. The first surveyed 13 participants using a background questionnaire and the GMS. The participants were high school social studies teachers from Hillsborough and Pasco counties in Florida. The researcher then interviewed three participants who scored highest on the GMS and three participants who scored the lowest. Carano (2010) found that family, exposure to diversity, minority status, curious disposition, and global education courses were themes that emerged from initial development of global perspectives. Additionally, the researcher found that international travel, global education courses, mentoring, and professional services were themes that emerged from intensification of global perspectives. The participants stated that every theme other than curious disposition provided resources in curricular decision making, and that all but exposure to diversity and international travel provided strategies in

curricular decision making.

The most recent replication of Hett's (1993) GMS, and perhaps the most relevant to this study, was conducted by Kirkwood-Tucker, Morris, and Lieberman (2011) who examined degrees of global-mindedness of 644 undergraduate elementary and high school social studies teacher candidates at five of Florida's largest public universities. Findings demonstrated significant correlation between higher scores and the following variables: the ability to speak two or more languages; taking courses with a global orientation; high grade point average; progressive political orientation; country of birth outside of the United States; and – similar to previous findings – female gender.

Hett's (1993) research and findings, as well as the findings of subsequent studies employing the GMS, have significant implications for school leaders in terms of identifying the attributes and dimensions necessary for shaping school communities better equipped to respond to the challenges and complexities of globalization. If principals are expected to develop a global awareness, they must be able to demonstrate the values and understandings necessary to manage the forces of continuity, change and inequality that are being exacerbated by globalizing forces. This study's investigation of the global-mindedness of school leaders is predicated upon Hett's (1993) research. Although Hett's (1993) GMS was not conceptualized to measure the criticality of leadership perspectives, it is an important indicator of whether school leaders possess the crucial characteristics (responsibility, cultural pluralism, efficacy, globalcentrism, interconnectedness) to lead schools to success in the 21st century.

Selected Demographic Factors as Potential Confounders or Effect Modifiers for this Study

As discussed previously in the section on "Findings from Subsequent Research Using Hett's Global-Mindedness Scale," researchers considered a variety of demographic

characteristics. These included: gender; ethnicity; country of birth; teaching experience in country of birth; international experience and the corresponding length of time abroad; the ability to speak two or more languages; taking courses with a global focus; high grade point average; and progressive political orientation. The researcher has chosen to include many of these factors as potential confounders or effect modifiers for this research. Additionally, the researcher has chosen to include a principal's years of experience as a demographic factor based on the following supportive research.

Research suggests it takes at least five years to put a teaching force in place and fully execute policies and practices that in turn will positively impact a school's performance (Seashore-Louis, Wahlstrom, Leithwood, & Anderson, 2010). However, the same researchers noted that effective principals still make significant improvements in their first years (Seashore-Louis, et al. 2010).

In a 2005 study focusing on the relationship between principals' prior teaching experience and their years of experience in their current position to school performance, Jackson surveyed 501 public school principals in the state of North Carolina to obtain selected demographic information. Of the 501 principals, approximately half (254) had served in their current position for three or more years. Since Jackson (2005) used school performance data provided by the North Carolina Department of Public Instruction for the previous three years, it was necessary to restrict the analyses to principals who had been in their current positions for at least the three preceding years.

Jackson (2005) ran a series of ANOVAs to determine if any statistically significant relationship(s) existed between the three main effect variables (principals' years of teaching experience; principals' years of teaching in a subject(s) included in the state's accountability

model; and principals' tenure in current position) and school performance. Results coupled with data provided by the North Carolina Department of Public Instruction showed no statistically significant relationships. Most notably, no statistically significant relationship existed between principals' tenure in their current position and school performance (Jackson, 2005).

In a second study of selected North Carolina principals, similar to Jackson (2005), Miller (2009) used a regression model on annual state-wide exams while controlling for fixed effects of school and year. The results showed that average student achievement in North Carolina public schools was lower in the first two years of a principal's tenure at a given school relative to prior student achievement at the school when led by the previous principal.

Earlier research concerning principal tenure and student achievement is mixed. For example, Rowan and Denk (1984), Phelps (2000), and Bruggink (2001) found an inverse relationship between principal tenure and student achievement. In contrast to the Rowan and Denk (1984) study, Miskel and Cosgrove (1984) found no significant relationship between principal tenure and student achievement.

In later studies, Balfanz and MacIver (2000) and Fogo (2002) asserted that, regardless of what school reforms are implemented, student achievement is difficult to improve without a stable principal. Research has shown that low-performing schools are correlated with low-performing principals (Papa, Lankford, & Wyckoff, 2002). Fogo (2002) argued that struggling schools that made an effort to improve experienced higher levels of principal turnover than high performing schools. Fogo (2002) also asserted that those schools with higher rates of principal turnover were more likely to remain a failing school.

Macmillan and Meyer (2003) suggested that the principal's comprehensive view of the school is crucial to student achievement; however, Copeland (2001) states that it is rare a novice

principal is able to enter the role of principal and meet all of the expectations associated with effective principalship (Copeland, 2001). Similarly, Deal and Peterson (1994) found that assuming the role of a school principal was filled with unexpected problems and conundrums.

Macmillan and Meyer (2003) also asserted that there was a relationship between principal tenure and teachers' work. Schools with lower rates of principal turnover had higher levels of teacher buy-in and commitment to reform efforts at the school. DuVall (2001) studied school systems that showed above average achievement gains and found that student achievement was linked to leadership tenure. In other words, schools with lower rates of principal turnover showed greater student achievement than those schools with higher rates of principal turnover.

Research has shown that principal involvement in curriculum and instructional matters influences student achievement (Newmann, King, & Youngs, 2000). Researchers have linked principal tenure to their involvement in matters pertaining to curriculum and instruction at the school (Gieselmann, 2004). Agunloye and Sielke (2007) found a relationship between principal tenure at the school and student achievement. They hypothesized the longer the principal's tenure at the school, the more time and opportunity was afforded for the principal to implement his or her vision and expectations at the school.

Principal tenure is a key element considered by school districts when looking to turn around low performing schools (Ylimaki, 2007). Ylimaki studied inexperienced and experienced elementary school principals in four high poverty, high minority elementary schools and asserted that even though all principals in the study experienced improved student achievement, experienced principals employed substantive curriculum and instruction improvement strategies. The experienced principals were more confident than the less

experienced principals were; this difference in confidence was positively correlated with the level of confidence felt by the teachers at the schools in the study (Ylimaki, 2007).

Selected School Characteristics as Potential Confounders of Effect Modifiers for this Study

Just as effective school leadership is critical for student achievement (Kearney, 2005), researchers have found that various school characteristics may have an effect on student achievement. The following section focuses on the school characteristics of locale, socioeconomic status, student race/ethnicity, and school size.

School locale. Poor and minority students tend to be located in rural and urban communities that have lower income residents and fewer economic opportunities than their suburban counterparts. For instance, suburban neighborhoods have a propensity for consisting of more affluent and educated families than urban and rural areas. If children attend their local schools, suburban schools serve children with more resources than urban and rural schools (Roscigno, Tomaskovic-Devey, & Crowley, 2006).

Condrón and Roscigno (2003) studied district level spending, the effects of spending, and the functions of spending. They maintained that the most important function of spending was for instruction, which included teacher salaries, books, and classroom instructional materials. In the Columbus, Ohio district they studied, nearly 60% of a wealthy school district's overall budget was appropriated for these expenditures. Condrón and Roscigno stated that instructional spending matters because it attracts and retains qualified staff. The researchers also concluded that the maintenance of school buildings had an impact on student achievement. Unhealthy and unsanitary conditions such as cracked walls, leaky roofs, and run-down restroom facilities distract students from learning (Kozol, 1991). These physically uncomfortable

environments hinder student achievement. In summary, Condron and Roscigno (2003) concluded higher spending promoted student achievement.

Rebell (2007) and Rumberger (2007) both reported on the strong relationship between residential location and class stratification that resulted in the vast majority of poor students attending public schools in which inordinately high percentages of the students lived in low-income households. Rebell (2007) observed that many African American and Hispanic public school students attended schools in which their classmates were predominantly members of established minority groups. Rebell (2007) stated, “Latino and Black students comprise 80% of the student population in extreme-poverty schools (90% to 100% poor), and more than 60% of Black and Latino students attend high-poverty schools, compared with 18% of White students.” (p. 1474)

According to Rumberger and Palardy (2005), numerous studies have documented how the demographic composition of the student body within a school influences student achievement that was independent of, but nevertheless affected by, individual students’ background factors. In a study of 14,217 U.S. students who completed both the eighth- and twelfth-grade NAEP examinations in mathematics, science, reading, and history, Rumberger and Palardy (2005) found that the average socioeconomic level of the students’ schools had as much of an impact on the student learning gains in high school as the students’ own socioeconomic status. Social class and race showed associations, but the socioeconomic status of the school was a more powerful predictor of learning in high school than school racial composition.

From a meta-analysis of 74 empirical investigations conducted between 1990 and 2000, Sirin (2005) affirmed that the socioeconomic status of students had a profound influence on

their achievement. The socioeconomic status of the school and neighborhood exerted an influence on student achievement that was equal to that of individual background characteristics. For instance, the link between an individual students' socioeconomic status and their academic achievement is weakest in urban schools because of the dearth of educational and human resources available in those schools. Among African American students, Sirin (2005) found that the compositional socioeconomic status of their school or neighborhood was a stronger determinant of student achievement than individual household socioeconomic status.

According to Rebell (2007), in the year 2000, educational per-pupil spending in high-poverty districts in the United States was \$907 less per student than spending on students in low-poverty districts. Cary (2004) also cited examples in which spending per pupil in low-socioeconomic-status districts was substantially lower than spending per pupil in neighboring or geographically-proximate high-income districts. Both Cary (2004) and Rebell (2007) stated that the accountability measures of the No Child Left Behind Act of 2001 sought to equalize opportunity and achievement, but the imbalance in spending per pupil across the country hampered the ability of districts to meet these achievement goals for all students.

According to Planty et al. (2008) school finance equalization efforts in various states led to high-poverty districts in some areas spending more per student (\$9,892) than low-poverty districts (\$9,263). Additionally, Loeb, Bryk, and Hanushek (2007) found that spending per pupil in California was higher in districts with high percentages of students in poverty, English language learners, or special education students. Despite efforts to add resources to high-poverty districts, there was almost no change in the reported student achievement (Loeb et al., 2007).

Verstegen, Venegas, and Knoeppel (2006) observe that, in terms of school resources, as

opposed to spending per pupil, inequalities between rich and poor school districts continued to be evident throughout the United States. According to Darling-Hammond (2007), low-property-wealth districts report larger class sizes, fewer teachers and counselors, and offer fewer college preparatory courses, extracurricular activities, materials, technology, libraries, and special education services. Rebell (2007) observed this same phenomenon in California, where many low-socioeconomic-status high schools offer less than the curriculum required for students to apply for admission to state universities. Due to the small size of most rural schools, they are less likely to offer Advanced Placement (AP) courses than schools in other locations, which leads to a disadvantage for rural students who have less exposure to the more rigorous curriculum associated with upper level courses (Roscigno et al., 2006).

While most of the research on public school finance focuses on operating budget income and expenditure, high-poverty districts also suffer from inadequate capital for school construction and repair (Rueben and Murray, 2008). When compared to their low-poverty counterparts, schools in high-poverty districts are much more likely to be overcrowded in aging facilities in need of major repairs. As Rueben and Murray (2008) state, “The schools in the highest poverty settings tend to have the worst physical capital” (p. 9).

One of the primary reasons that it is more expensive to educate student from a low-socioeconomic-status household versus one from a high-socioeconomic-status household is what Roscigno et al. (2006) refer to as the disadvantage of place. Urban school districts suffer a major cost disadvantage of place due to the additional spending required to attract and retain qualified teachers. Likewise, Greene, Huerta, and Richards (2007) note this same disadvantage of place when they observe, “Salaries and benefit costs for similarly experienced teachers can vary greatly from district to district even within a single state” (p. 51).

Flanagan and Grissmer (2006) note, “Teachers may be willing to accept lower wages in districts with better working conditions or higher student quality, both of which are likely to be correlated with higher student outcomes” (p. 3). They state these attractive school characteristics are absent in most low-socioeconomic-status school districts. In particular, urban schools that serve low-socioeconomic-status students provide a salary premium.

According to a national survey by Lankford, Loeb, and Wyckoff (2002), teachers with 20 years of experience earn approximately \$5,000 more in urban schools than their counterparts in suburban schools. Their survey research also suggests that the premiums built into urban teacher salaries are not sufficient to retain qualified teachers. Lankford et al. (2002) also report that New York City teachers have the highest resign rate within the state, and the data show that teachers who leave the district generally possess higher academic credentials than those who remain. The resulting situation is that New York City, and similar urban districts that serve low-performing, low-socioeconomic-status students, have higher labor costs per student and employ a greater proportion of inexperienced teachers.

Low-income rural school districts also face a distinctive cost structure problem. As Imazeki and Reschovsky (2005) note, students who attend rural public schools consistently underperform on fourth-, eighth-, and twelfth-grade NAEP tests compared to students in suburban schools. They suggest that many rural districts enroll high concentrations of low-socioeconomic-status students, have limited assessed valuation of property per student, and spend less per pupil than suburban or urban schools.

Socioeconomic status. The most significant factors contributing to an achievement gap among students all over the world are poverty and the inequalities in school resources, particularly schools and districts with large numbers of low-socioeconomic groups (Rotberg,

2008). Students from low-income homes often perform lower academically (Books, 2009). Almost 50 years ago, the Coleman report (1966) highlighted the significant relationship between family socioeconomic status and student achievement. The report claimed that parents' socioeconomic status was one of the strongest predictors of a child's academic achievement and educational attainment. In the 1970s income inequality in the United States began to grow sharply, a trend that continues today (United State Department of Labor, 2013). The gap between the rich and poor has continued to widen especially among families with children (Reardon & Bischoff, 2011). As a result of Reagan-era social policy changes, lack of housing, income-support, and social safety nets for low-income families have contributed to the difficulty of impoverished families. "Not only do the poor have less money than they did before, they may have fewer social support systems as well" (Reardon, 2011, p. 26).

The effects of poverty are widespread and impact all of society. Compared with other industrialized countries, the United States has one of the greatest socioeconomic gaps (Burney & Beilke, 2008). Statistics reveal childhood poverty rates in the United States exceed those of any other industrialized country (Parrett & Budge, 2012), and North Carolina is no exception.

In the 2012-13 school year, 56.14% of the students attending public school in North Carolina received free and reduced price lunch (North Carolina Department of Public Instruction, 2013). According to the U.S. Census Bureau, nearly 9% of White North Carolinians are poor. Blacks and Hispanics make up approximately 26% of the North Carolina population, yet each group comprises approximately 25% of the poor population (U.S. Census Bureau, 2012). Studies show poverty has the most long-term impact on Blacks (Parrett & Budge, 2012).

Low-income, single parents, and poorly educated mothers are factors that place students at great risk for academic challenges and potential failure (Neuman & Celano, 2001). Students

from low-income homes may have fewer opportunities for authentic educational experiences before entering school in kindergarten and beyond. Further, parental support with homework may not be as easily accessible due to the amount of time spent at work by adults living in poverty. Adults with low paying jobs work the equivalent of nearly two jobs and thus spend more time at work than their wealthier counterparts (Gorski, 2008).

Lareau (2003) completed a study of parental involvement, finding a correlation between social capital and social class. Even when the educational goals for their children is similar, parents with higher incomes have social networks and assets that enable them to provide more resources and opportunities for their children than parents with low or no income. Furthermore, values and beliefs that direct educational paths are formed from the social and physical culture and environment to which parents and children belong (Neuman & Celano, 2001).

Seventy-five percent of the academic achievement gap is found in students from low socioeconomic backgrounds (Rotberg, 2008). In 2010, 64% of fourth graders performed at or above the basic level, 34% at or above the proficiency level, and 8% at the advanced level. Yet, while 74% of the students who scored below the 25th percentile were those eligible for free and reduced price lunch, only 23% of students who scored above the 75th percentile qualified for free and reduced price lunch (Institute of Educational Sciences, 2014).

Drukker, Feron, Mengelers, and Van Os (2009) report that school achievement is lower in males living in poverty-stricken neighborhoods. Children who grow up in impoverished conditions are more likely to experience delays in school readiness. Rigorous and engaging academic opportunities necessary for academic success as well as background preparation are often lacking in low-income homes (Burney & Beilke, 2008). Entwisle, Alexander, and Olson (2007) propose the *faucet theory*, which suggests there is a vast difference in the flow of

resources available to children living in poverty, especially during the summer months. That is to say, when the school year is in progress, the faucet is turned on for all students and therefore everyone has access to learning materials and educational resources. In the summer months and vacation seasons, the faucet turns off for low-income children, meaning those children do not have the continual access that their wealthier counterparts do.

Neuman and Celano (2001) conducted a 3-year study in a large metropolitan city whereby they compared access to printed material (i.e. literature) in four neighborhoods representing a diversity of culture and economic status. They found a marked difference in the quantity and quality of resources available to children living in poverty. There were three times the number of stores that sold reading material for children in the middle-class neighborhoods as compared to lower-class neighborhoods where there were no places to purchase reading material for children. When Neuman and Celano (2001) counted the number of reading resources available to all four neighborhoods, there was a vast difference. In the two middle class neighborhoods, there were 18,610 titles for young adults to purchase as compared to none (as deemed appropriate for young adults) in the lower class neighborhoods. A limited amount of access to print and minimized opportunities for language arts or deep thinking experiences narrow literacy development and may increase the achievement gap (Newman & Celano, 2001).

Children raised in poverty hear approximately 30% of the vocabulary of children compared to those being raised by professional-class parents. Coupled with biological differences, lower verbal stimulation places impoverished children at a disadvantage (Gurian & Stevens, 2005). Duke (2004) found that schools with a high population of students from poverty-stricken homes spent less time reading informational text than those from higher socio-economic status homes. Reading informational texts and hands-on investigations provide a deep

knowledge base often lacking in students from low-income homes (Duke, 2004). When teachers include more access to informational text, students demonstrate growth on standardized tests as related to decoding and word identification. Additionally, students who are delayed in sound-letter knowledge show significant growth with increased exposure to informational text (Duke, 2004).

Children gain knowledge and understanding through exposure to print (i.e. literature), creating a shared and increasingly positive relationship regarding initial and developing reading skills. When children have fewer experience with print, they become less likely to develop proficient reading skills alongside their same-aged peers, thus “beginning the spiraling effect of the rich-get-richer, poor-get-poorer phenomenon.” (Neuman & Celano, 2001, p. 2) Once children become part of the public school system, the problem often becomes intensified by remedial instruction that tends to include fewer interactions with printed material than their more skilled peers. In turn, these children typically receive the poorest language and literacy instruction (Neuman & Celano, 2001).

Rebell (2007) notes that the lack of family resources in low-socioeconomic-status households results in an immediate and ongoing impact on the success of children from these homes. Students from low-socioeconomic-status homes are prone to vision impairments, hearing problems, exposure to toxic substances, and asthma, all of which affect the capacity to learn. Thomas and Bainbridge (2001) similarly note that household poverty is related to inadequate child nutrition and health care. These poverty-related conditions carry over from home to the learning environment.

According to Armor (2003), the home environment of both preschool and school-aged children from low-income families provides less cognitive stimulation than the families of

children from higher-income households. Welsh, Parke, Widaman, and O'Neil (2001) report poor children also experienced below-mean exposure to verbal stimulation and access to reading materials. Poorer children are less likely to develop social skills and habits associated with academic engagement and achievement in school.

As Bouffard and Stephen (2007) observed, parental expectations and beliefs are strong predictors of student achievement from kindergarten through high school. Financially challenged parents tend to hold relatively low expectations for student achievement and general life prospects (Rumberger, 2007). According to Brown-Cecora (2008) many poor children internalize these low expectations, becoming convinced that education does not make a difference in their lives, and therefore either reduce their school efforts or withdraw altogether.

Parental and family engagement in the schools that their children attend is another strong determinant of student achievement according to Houtenville and Conway (2008). Low-income parents are much less likely to become involved in school activities than their middle-class peers according to Loeb et al. (2007).

Additionally, Pribesh (2005) reports that poor households are more mobile, which leads to a corresponding detrimental effect on student achievement. Thirty percent of third-graders whose families report annual incomes below \$10,000 change schools frequently, compared to only 10% of children from families reporting incomes of \$25,000 to \$49,000 (Pribesh, 2005). Brown-Cecora (2008) reports that demographic factors such as household income, eligibility for free and reduced price lunches, and prior education level of parents demonstrate a negative impact upon the student achievement of children from low-socioeconomic-status households. Furthermore, Brown-Cecora notes this impact tends to increase across time and grade levels. Similarly, Rumberger (2007), in a study of 9,726 elementary school children attending schools

with high proportions of students from low-income households, found that 25% of the variance in sixth-grade mathematics achievement was attributable to student characteristics, while 75% was attributable to school characteristics. Machtinger (2007) postulates that this could be because high poverty schools are often staffed with inexperienced and ineffective teachers.

Student ethnicity. The 1966 Coleman Report was the first major study to use student characteristics, including ethnicity, as an index to measure student achievement (Coleman, 1990). The authors concluded that more than 70% of the variation in student achievement lied within the same student body rather than between schools. These results are noteworthy, in that Coleman (1990) argued student characteristics play a bigger role in influencing student achievement than teachers' characteristics, school facilities, and students' attitudes. The impact of student characteristics does not diminish over the years (Coleman, 1990).

Since the Coleman Report, scholars have continued to study plausible influences on the achievement gap (Coleman, 1990). In a later study, Jencks and Phillips (1998) reviewed every national survey of high school students, including the Coleman Report of 1966, and found that the ethnic achievement gap decreases over time, but Whites were still overrepresented in the upper percentile on all assessments including scientific, technical, vocational, and military tests. Escamilla, Mahon, Riley-Bernal, and Rutledge (2003) reported a large gap in Hispanic achievement scores after analyzing third and fourth grade Colorado state assessment scores in 1999, 2000, and 2001. The English-speaking and Spanish-speaking Hispanic students lagged behind Whites even when Spanish-speaking Hispanic students participating in a bilingual program took the exam in Spanish. The gap was larger for students in fourth grade, indicating that English proficiency does not necessarily increase students' content knowledge or close the achievement gap.

Sanchez, Bledsoe, Sumabat, and Ye (2004) found a similar racial achievement gap when they reviewed the state reading assessment scores of students in grades 3 through 8 and grade 10 in a large city school in Texas. Hispanic students scored significantly lower than White, Asian, and African American students in all subject areas. There was a decrease in the test score gap as students progressed from elementary to middle to high school, but the gap was still considerable. The results are comparable to those of Haile and Nguyen (2008), which investigated eighth-grade students' academic achievement in mathematics, reading, and science using data from the year 2000 of the National Education Longitudinal Study (NELS). Although the gaps varied by content area, there was a significant achievement gap between the different racial groups: Asians and Whites scored significantly higher than Hispanics and Blacks. The gap between Hispanics and Blacks was the smallest (Haile & Nguyen, 2008). Stiefel, Schwartz, and Ellen (2006) also showed significant disparities in standardized test scores between White and Black students and between White and Hispanic students in New York City elementary and middle schools.

Whereas most of the achievement gap research exists at the elementary level, Borg, Plumlee, and Stranahan (2007) studied achievement at the high school level. Borg et al. (2007) analyzed over 5,000 tenth-grade students' Florida state assessment scores in mathematics and reading in a public school district after the assessment became a requirement for high school graduation (Borg et al., 2007). They concluded that race is an important factor regarding proficiency on the assessment, and stated, "An average Hispanic student has a 54% probability of passing on the first try— 11 percentage points lower than an identical White student" (p. 712).

The National Assessment of Educational Progress (NAEP) is the largest nationally

representative and continuing assessment of what American students know and can do in various subject areas (National Assessment of Educational Progress, 2013). NAEP assessment results are recorded for three racial-ethnic subgroups: White, Black, and Hispanic. Reading results for Hispanic students were first recorded in 1975; however, there is not enough recorded data for other minority students to be included in long-term trend studies. Fourth graders who scored below the 25th percentile were more likely to be Hispanic (35%) or White (33%), followed by Black (25%) and Asian (3%).

Fourth graders who scored above the 75th percentile were White (71%), Black (7%), Hispanic (11%), and Asian (8%) (Institute of Educational Sciences, 2014). Since 1992, fourth grade Black students have made larger gains contributing to a smaller gap of 25 points in 2011 than in 1992, when the achievement gap was 32 points. The gap of 24 points between fourth grade White and Hispanic students has significantly differed since 1992. The percentage of Hispanic students who took the NAEP in 2011 exceeded that of all other ethnic groups (Institute of Educational Sciences, 2014).

Results from the most recent NAEP (2013) indicate that Whites, Blacks, and Hispanics are all making small to insignificant gains in reading and math; however, large gaps still persist. In fourth grade, White students who took the reading assessment outperformed Blacks and Hispanics by 22 points. In eighth grade, White students outperformed Blacks and Hispanics in reading by 22 and 15 points respectively (Institute of Educational Sciences, 2014) (Burney & Beilke, 2008). In fourth grade, White students who took the math assessment outperformed Blacks and Hispanics by 24 and 15 points respectively. In eighth grade, White students outperformed Blacks and Hispanics in math by 28 and 17 points respectively (Institute of Educational Sciences, 2014).

Historically, Black males from poor backgrounds score lowest on the NAEP tests; the gap widens significantly during adolescence. In findings from kindergarten studies, 71% of White students are able to recognize the alphabet compared to 80% of Asian children; however, only 59% of Black students and 51% of Hispanic kindergarten children are successful in letter recognition (Coley, 2003). Factors including a lower level of academic expectation as well as the potential for racial discrimination for Black males may account for this literacy underachievement (Matthews, Kizzie, Rowley, & Cortina, 2010). The multiplicative risk of the male gender paired with racial minority status may account for lower academic achievement. The academic risk for Black males may exist very early. Black children do not perform as well as their White counterparts on early reading assessments in writing, basic vocabulary, and decoding strategies and skills (Fryer & Levitt, 2006).

Burney and Beilke (2008) report that students from low-income ethnically diverse subgroups are underrepresented in advanced coursework while the high-achieving White counterparts are overrepresented. High achieving students tend to come from wealthier homes while lower achieving students live in low-income homes (Burney & Beilke, 2008).

Throughout the literature there are pervasive findings that minority students score lower than their White peers on standardized tests of achievement (Ikpa, 2003). Tate (1997) documents changes in mathematics achievement for students in the United States using national trend studies, advanced placement tests, and college admissions examinations. In terms of racial and ethnic trends, Tate (1997) reports that between 1980 and 1995 the gaps in math achievement between racial/ethnic groups has narrowed, but that “African American and Hispanic students continue to perform at significantly lower levels than White and Asian students” (p. 19).

School size. The relationship of school size and student achievement is of particular interest to educators in the United States as Americans have experienced evolving preferences in school size. In the early 20th century, many reformers saw the once honored and ubiquitous small rural schools as “ineffective, inefficient, and hindered by provincial attitudes and local politics” (Arnold, 2000, p. 3). Consolidation quickly became the dominant solution (Fowler & Walberg, 1991). Across America, school districts merged to form larger districts (Kenny & Schmidt, 1994). Between 1930 and 2000, the number of U.S. school districts decreased by 91% while the number of U.S. students increased by 83% (National Center for Education Statistics, n.d.), indicating that there were indeed new, larger districts. For example, Indiana’s School Corporation Reorganization Act of 1959 saw districts fall from 900 to 400 in a 10-year span and slowing but continuing, until in 2010 only 292 districts remained (Dokoupil, 2010). In Illinois, the same consolidation trend occurred, resulting in 1,008 districts in the 1983-84 school year narrowed to 866 districts by the 2011-2012 school year (Illinois State Board of Education, 2011).

School reorganizations reflected the industrial philosophy that costs are reduced by increasing the size of an organization (Purdy, 1997); they also reflected concerns about education quality and lack of opportunity in small schools (Fowler & Walberg, 1991). Conant (1967) called these concerns to national attention, arguing the enrollment of many American public high schools was “too small to allow diversified curriculum except at exorbitant cost” (p. 77). He suggested more comprehensive educational programs could be offered at lower costs and with higher quality in larger high schools.

Today, following the consolidation rush in the latter half of the 20th century, small schools have once again found favor (VonSchnase, 2011). Small schools, however, face

significant 21st century challenges, including increasing poverty rates, lack of funding, isolation, difficulty drawing in high-quality teachers, and elevated turnover rates of teachers and administrators as well as increased drop-out rates, increasingly low student attendance rates, and rising student mobility and homelessness (Arnold, 2000; VonSchnase, 2011). Large schools face their own problems of dangerous school environments, low graduation rates, low achievement rates for disadvantaged students, and large achievement gaps related to poverty, race, and gender (Bickel & Howley, 2000; Howley & Howley, 2004). Additionally, larger schools may also experience fiscal inefficiency (Howley, Johnson, & Petrie, 2011).

Consensus on how to define degrees of school size (small, medium, large), optimal school size, or the effects of differing school sizes remains elusive. Williams, (1990), after reviewing 30 research studies on school size, stated no clear agreement exists on the tipping point between small and large schools. Finding the answer to “How small is small enough or how large is large enough?” has proven to be difficult for educators and researchers (Williams, 1990).

The lack of agreement on optimal school size for maximum student benefit is obvious in the varying research findings. Bancroft, Barker, and Gump (1964) reported a significant relationship between high school size and meaningful student involvement. Studying 13 eastern Kansas high schools with student populations ranging from 35 to 2,287 students, Bancroft et al. (1964) noted students in small schools participated in a wider variety of activities, held more positions of leadership, and had more positive self concepts than students from larger schools, all of which led to higher student achievement. Garbarino’s (1980) study concluded that high schools with more than 500 students are beneficial. Goodlad (1984) similarly found that a student population of 500 to 600 is optimal. However, Gregory and Smith (1987) and Sizer

(1992) argue a much lower number, 250 students or fewer, is the best high school student enrollment size.

Fowler and Walberg (1991) studied 293 New Jersey public high schools and analyzed the effects of school size based on 18 school outcomes ranging from state-developed test scores to retention, suspensions, and post high school employment. These outcomes were regressed on 23 school characteristics, including socioeconomic status, school size, and teacher characteristics. School size was negatively related to outcomes, suggesting smaller schools might be more efficient at supporting educational outcomes (Fowler & Walberg, 1991).

Cotton (1996) supports the idea of a 600-900 student population as the optimal size for a school. In schools of this size, Cotton's (1996) findings reveal higher rates of parental involvement, a stronger sense of staff and student efficacy, and greater student involvement in extracurricular activities in student bodies. Cotton (1996) argues although many small schools are rural, it is the smallness of schools that benefits students, not their settings.

Lee and Smith (1997) also investigated the relationship between high school size and student achievement. They used math and reading scores from a nationally representative sample of U.S. high schools and controlled for prior academic proficiency as well as other characteristics such as social background. Like Cotton, they concluded high school enrollments of 600- 900 offer the most benefit to students. At the same time, they found although small schools are beneficial, schools could be too small. Their results suggest students learn less in schools with fewer than 600 students. On the other end of the spectrum, they reported students in large high schools, especially those over 2,100, learn considerably less. Their study also concluded school enrollment size has a greater effect on student populations with lower socioeconomic status and on student populations with high concentrations of minority

populations (Lee & Smith, 1997). For both lower-socioeconomic status students and minority students, small schools held greater success.

Howley and Bickel (1999), in the well-known Matthew Project, extended school size and student achievement studies to the states of Georgia, Ohio, Texas, and Montana to analyze the relationship of school size and student achievement in a variety of settings. Like Lee and Smith's (1997) findings, the Matthew Project concluded student performance is characterized by an interaction effect between school size and student achievement with low socioeconomic status students benefitting from small schools. The researchers also found more affluent students benefit from larger schools (Howley & Bickel, 1999). The Matthew Project report suggests an upper limit for high schools of 1,000 students, but the limit might be 1,500 for very affluent communities. In contrast, the findings also indicate some communities might necessitate a limit of 100 high school students to provide student success. In general, the report called for smaller schools for impoverished students. Similarly, Hager (2006) reviewed literature on the effect of school size and then analyzed Kentucky's 1,200 public schools for effects of school size on student achievement. Hager concluded larger schools have a negative impact on learning, particularly for the disadvantaged.

Wyse, Keesler, and Schneider (2008) in a study of over 12,000 high school students, analyzed the possible effect of small school size on student achievement in mathematics. Their findings indicate smaller school size does not necessarily equate to greater student mathematical achievement. They also found, like Howley and Bickel (1999), there was not one school size that is most advantageous in providing maximum student mathematical achievement.

In light of school reforms of the 1990s and early 2000s, which raised concerns about larger educational units, Weiss, Carolan, and Baker-Smith (2010) studied mathematics

achievement and school size of 10,946 tenth graders. They found school size was highly related to student engagement, which indicated student success. Student bodies beyond 400, they found, experienced potentially harmful changes. Echoing earlier researchers, they noted, however, “group size affects different students differently, eliminating the ability to prescribe an ideal cohort or school size” (Weiss et al., 2010, p. 163). In fact, some students benefit from the anonymity of large schools. Weiss et al. (2010) noted as well the search for the “right size” (p. 174) of school has yielded conflicting results that are inconsistent at best. Like the Matthew Project findings, the authors did not find consistent benefits of smaller schools for all kinds of students and pointed out small schools “are not a one size fits all solution” (Weiss et al., 2010, p. 174).

A report prepared by Arnold (2004) for the Institute of Education Sciences also noted small size does not automatically result in increased student achievement. Small schools, the report concludes, should focus on how to better use their small student enrollment number to increase student achievement, since many factors influence student achievement in addition to school size. Arnold (2004) lists a potential future research question as “What is the nature of the relationship between school size and student achievement?” (p. 4).

Chapter Three: Methodology

The purpose of this mixed methods study was to explore the relationship, if any, between North Carolina public high school principals' overall global-mindedness and each of its dimensions and high school student achievement using Hett's (1993) Global-Mindedness Scale (GMS). The GMS provides measurements of affective behaviors, attitudes and values related to the development of global-mindedness. It has been replicated through various empirical studies to measure levels of global-mindedness for teacher candidates, undergraduate students, university faculty and administrators, and agricultural extension agents (Acolatse, 2010; Carano, 2010; Cogan and Grossman, 2009; Duckworth, Walker-Levy, and Levy, 2005; Gillian, 1995; Kehl and Morris, 2008; Kirkwood-Tucker, Morris, and Lieberman, 2011; Smith, 2008; Walton, 2002; Zhai and Scheer, 2004; Zong and Farouk, 1999). Although the GMS (Hett, 1993) has been employed across various demographic groups in the past, this research study offered the unique implementation of the instrument in a group of high school leaders.

Using a mixed methods, non-experimental research design employing Hett's (1993) GMS, this study also examined the relationships between global-mindedness and demographic variables of high school principals and school characteristics. A mixed methods design offered a more holistic approach for exploring the level of global-mindedness among high school leaders. Specifically, using a mixed methods design allowed the researcher to view findings in context. Context is what shapes beliefs, attitudes, and the behavior of people and their experiences. As Sherman and Webb (1995) state, "Educational research today requires a more comprehensive

perspective in which the considerations that qualitative researchers raise, and the questions about worth and intent posed by philosophy, are as much a part of the discussion as are measurement and analysis” (p. 11). Certainly the topic of this research is a complex area of study, one that demands a wide focus if it is to be fully understood. Thus, by viewing the findings through a mixed methods design, a greater understanding of the relationship between overall global-mindedness—and each of its dimensions (responsibility, cultural pluralism, efficacy, globalcentrism, interconnectedness)—in North Carolina public high school principals and student achievement using Hett’s (1993) GMS was realized.

The three specific research questions that guided this study were as follows:

- Q1: What is the level of global-mindedness among NC public high school principals?
 - How do principals view their roles in promoting global-mindedness?
 - What have principals done to support global-mindedness?
 - How do the principals’ viewpoint and actions relate to their level of global-mindedness?
- Q2: Is the principal’s level of global-mindedness, including the total score and each dimension, associated with student achievement in NC public high schools?
- Q3: Do other factors influence the association, or lack of association, between global-mindedness and student achievement?

Current North Carolina high school principals were surveyed to determine their level of global-mindedness using the GMS, a validated tool designed by Hett (1993). This survey also provided information for the qualitative component of this research. Student achievement and school characteristics were obtained from North Carolina Department of Public Instruction. The

data analysis was performed at the school level. Principals' responses were linked to school characteristics and student achievement based upon the school's LEA code. School level data for student achievement was measured by: (1) ACT composite score, (2) EOC composite score, and (3) graduation rate.

Research Questions and Hypotheses

The primary aim of this research was to determine if a principal's level of global-mindedness was associated with student achievement. The research also aimed to elucidate the influence of other factors on the association between global-mindedness and student achievement.

The aims of this research were to determine:

- 1) The level of global-mindedness among high school principals in North Carolina as measured by Hett's (1993) GMS with further exploration of:
 - a. How principals viewed their role in promoting global-mindedness
 - b. What principals had done to support global-mindedness
 - c. How the principals' viewpoint and actions related to their scores on the GMS
- 2) If the principal's level of global-mindedness was related to student achievement as measured by the ACT composite score, EOC composite score, and graduation rate, and to determine the strength of the association between student achievement and each dimension of the GMS as measured by sub-scores on:
 - a. Responsibility
 - b. Cultural pluralism

- c. Efficacy
 - d. Globalcentrism
 - e. Interconnectedness
- 3) If other factors influenced the association, or lack of an association, between global-mindedness and student achievement. Specifically, the influence of school characteristics and demographic characteristics of school principals were examined, including the following factors:
- a. School and student characteristics:
 - i. School location
 - ii. SES (as measured by free and reduced price lunch)
 - iii. Race/Ethnicity
 - iv. School size (as measured by average daily membership)
 - b. Principal demographics
 - i. Gender
 - ii. Race/Ethnicity
 - iii. Country of birth
 - iv. Travel and time outside of country of birth
 - v. Number of fluent languages
 - vi. Years of experience as a principal at current school
 - vii. Years of experience as a principal
 - viii. Years of experience as an educator

Participant Sample and Data Collection

All principals in North Carolina public high schools for the school year 2014-15 were invited to participate in this study. The North Carolina Department of Public Instruction provided a list of primary email addresses and additional contact details including school name, location, address, and phone number for each prospective participant. The primary method of communication with schools occurred via electronic mail. The target response rate for this study was 25% or better. Methods to promote the target response rate included an electronic reminder message to those who had not responded within the first two weeks of receiving the request to complete the questionnaire, a follow-up phone call after four weeks if no response was received, and small financial incentive to complete the survey.

The researcher used Qualtrics as the method to collect data via the questionnaire (Appendix H). Data collected on principal characteristics were: gender, race/ethnicity, country of birth, travel and time outside of country of birth, languages spoken, years of experience as a principal at current school, years of experience as a principal, and years of experience as an educator. Additionally, the researcher used Hett's (1993) GMS to measure each principal's level in the five dimensions of global-mindedness (see Appendix I).

The researcher used North Carolina Department of Public Instruction to collect the identified school characteristics. Table 1 contains an overview of the data sources used in addressing each of the research questions.

Table 1. *Data Sources*

Research Question	Data Source 1: Existing Data from NCDPI for the school year 2012- 2013	Data Source 2: Global-Mindedness scores obtained by responses to the Qualtrics Survey	Data Source 3: Demographic Responses from Principals responding to the Qualtrics Survey
What is the level of global- mindedness among NC public high school principals?		GM Total Responsibility Cultural Pluralism Efficacy Globalcentrism Interconnectedness	Q8: The Common Core State Standards state that all students should be prepared for a successful life in the 21 st century. This includes teaching students to be globally-aware citizens. How do you see your role in this global awareness shift? Q9: What, if anything, have you personally done to support global awareness in your school?
How is the principal's level of global- mindedness, including the total score and each dimension, associated with student achievement in NC public high schools?	Average school level data: ACT Composite Score EOC Composite Score Graduation Rate	GM Total Responsibility Cultural Pluralism Efficacy Globalcentrism Interconnectedness	
Do other factors influence the association, or lack of association,	Average school level data: ACT Composite Score	GM Total	Principal data: Gender Race/Ethnicity Country of Birth

Research Question	Data Source 1: Existing Data from NCDPI for the school year 2012- 2013	Data Source 2: Global-Mindedness scores obtained by responses to the Qualtrics Survey	Data Source 3: Demographic Responses from Principals responding to the Qualtrics Survey
between global- mindedness and student achievement?	EOC Composite Score Graduation Rate School level data for: School Location (LOCALE) Receiving Free and Reduced Price Lunch (FRL) Student Race/ Ethnicity (ETHNIC) School Size- Average Daily Membership (ADM)		Travel and Time Outside of Country of Birth Languages Spoken Years of Experience as a Principal at Current School Years of Experience as a Principal Years of Experience as an Educator

Protection of the Subjects

The Institutional Review Board (IRB) at the researcher's university reviewed the description of the research. In providing informed consent, the researcher notified the subjects that they could choose whether to respond to the survey or not. Respondents were given an opportunity to receive a small financial incentive for completing the survey, and an offer to make a contribution to a charity. Additionally, results of the investigation were made available to respondents. The participants were also informed that they had the right to withdraw at any time during the survey session, their data would be protected in an aggregated form and only used in this study, and they would not be identified in any manner.

The survey was designed using campus data collection software, Qualtrics, and was implemented via the Internet with privacy protection. The researcher collected participants' personally identifiable information during the survey in order to follow-up with non-respondents; however, the survey process remained confidential. Records associated with the research project were securely stored and only accessible by the researcher.

Research Instruments

Survey Research. According to Baxter and Babbie (2004), surveys provide the best way to collect original data for describing a population too large to observe directly. Survey data allows flexibility in analysis, allowing one to develop operational definitions from the results of the survey (Baxter & Babbie, 2004). On the other hand, survey research can lack validity because respondents are given standardized options that may or may not fit their exact belief on the subject. This may limit the depth of respondents' actual responses, potentially yielding inaccurate results (Baxter & Babbie, 2004). In response to this weakness, the researcher included two open-ended questions in the *Principal Background Questionnaire*, allowing the respondents to further explain their understandings and actions related to 21st century learning and global awareness.

Two survey instruments were used in this study. The initial instrument was the Global-Mindedness Survey (GMS) developed by Hett (1993), which enabled the researcher to determine a principal's level of global-mindedness and if the level was associated with student achievement (Permission to use the GMS was granted- see Appendix J). The second survey instrument contained measures of principal characteristics and open-ended questions, which allowed for exploration of the influence of other factors on the association between global-mindedness and student achievement.

The GMS was selected for two reasons. First, the underlying values of the five dimensions correlate to the underlying dimensions of global-mindedness as outlined in the review of the literature. The five dimensions are:

- **Responsibility:** A deep personal concern for people in all parts of the world which surfaces as a sense of moral responsibility to try and improve conditions in some way;
- **Cultural Pluralism:** An appreciation of the diversity of cultures in the world a belief that all have something of value to offer. This is accompanied by taking pleasure in exploring and trying to understand other cultural frameworks;
- **Efficacy:** A belief that an individual's actions can make a difference and that involvement in national and international issues is important;
- **Globalcentrism:** Thinking in terms of what is good for the global community, not just what will benefit one's own country. A willingness to make judgments based on global, not ethnocentric, standards; and,
- **Interconnectedness:** An awareness and appreciation of the interrelatedness of all peoples and nations, which results in a sense of global belonging or kinship with the human family. (Hett, 1993, p. 143)

These correlate to the five underlying dimensions articulated in the review of the literature, because they share the commonalities of looking out for the welfare of the global community, gaining an awareness and appreciation of diverse cultures, believing that there is a connection between the local and the global, and making students aware of global issues. Secondly, the GMS was chosen because of its strong validity and reliability, developed through a process of retroductive triangulation and grounded in sociological theory construction research that meets the criteria for psychometric measures. The GMS consists of a 30 item Likert-type scale

ranging across five choices from strongly disagree to strongly agree.

The second instrument was a demographic questionnaire used to help the researcher answer the third research question, “Do other factors influence the association, or lack of association, between global-mindedness and student achievement?” There were nine questions on the *Principal Background Questionnaire*. Questions four through six each related to travel and/or language experience. The rationale for these questions was largely grounded in the research of the correlation between travel and language with global-mindedness (Mapp, McFarland, & Newell, 2007; Pence & Macgillivray, 2008; Tye & Tye, 1998). It was the intent of the researcher to investigate the relationship of these independent variables to the overall global-mindedness score. At the end of the survey, the researcher included two questions asking principals to give a written response and examples. By including these questions, principals were able to respond with examples not specifically cited in the survey. Of particular importance to the study was what principals thought their leadership should do in order to promote the global awareness shift in their schools, and what they have done to support it.

Internal Consistency, Reliability and Validity of the GMS

According to Hett (1993), the GMS was initially developed to measure student attitudes related to their sense of connection to, interest in, and responsibility for the global community and to identify the types of behaviors that were related to this perspective. Hett gave the GMS to a sample of students at the University of California, San Diego (n=396). The internal reliability for the GMS, using Cronbach’s coefficient alpha was 0.90 overall. Alpha subscales ranged from 0.70 - 0.79. A content validity index (CVI) of 0.88 was established for the GMS by a panel of four content judges.

Hett noted that the five factors on the final instrument were conceptually distinct and

easily identified. Hett (1993) reported the use of the Spearman Brown prophecy formula to confirm the level of reliability for the overall tool as 0.93.

Table 2. Five-Factor Reliability Analysis of Hett's Global-Mindedness Scale

Subscale	Number of items	Standardize item alpha
Responsibility	7	0.80
Cultural pluralism	8	0.75
Efficacy	5	0.72
Globalcentrism	5	0.65
Interconnectedness	5	0.70
Total for GMS	30	0.90

In addition to conducting a reliability analysis, Hett (1993) determined the dimensionality of the GMS through the calculation of Pearson product-moment correlation coefficients. According to Hett, moderate correlations between subscales ranged from 0.34 to 0.52, indicating that the GMS was a multidimensional instrument and that each of the emerging five factors addressed a different and unique aspect of global-mindedness. In terms of convergent validity, Hett reported significant correlations ($r=0.65$, $p<0.001$), which were established between the reduced 30-item GMS with the Chauvinism subscale (reverse-scored) of the Global Understanding Project (Barrows et al., 1981). Additionally, to a lower positive correlation of 0.32, significant at the 0.01 levels with Yachimowicz's (1987) International Concern subscale, which was also adapted from the Global Understanding Project (Hett, 1993). Duckworth et al. (2005), and Kehl and Morris (2008), two studies discussed in Chapter Two, used the GMS in their studies to provide further validation of this instrument.

Student Achievement

The North Carolina Department of Public Instruction (NCDPI) has collected data on student achievement, student background characteristics, and school characteristics since the early 1990s and has made this data available to scholars through their publicly available files.

Access to these data allowed the researcher to examine three measures of student achievement: ACT composite scores, End-of-Course (EOC) composite scores, and graduation rates for the 2012-13 school year.

ACT exam. The first dependent variable chosen to measure student achievement was the school's composite score for the ACT (American College Testing) exam. This exam is a standardized test administered to all eleventh grade students in the state of North Carolina. The exam consists of four required parts and one optional part: English, Math, Reading, Science, and Writing (optional). The test questions were developed to directly relate to high school standards and are a measurement of achievement, whereas the SAT (formerly known as Scholastic Aptitude Test) was designed to measure aptitude. Each student receives a composite ACT score as well as separate subscores for each completed section (see Appendix K) (American College Testing Inc., 2014).

End-of-course exam. The second dependent variable chosen was the school's composite score from the End-of-Course (EOC) exam. Every high school student in the state of North Carolina takes the English II EOC, Math I EOC, and Biology EOC. These exams are graded on a scale of 1- 4. Each school is then given an EOC composite score that reflects the percent of students who score at or above Achievement Level 3 on these tests. A student's EOC score must account for at least 25% of the student's final grade in the relevant course, thus placing high importance on these exams for graduation (North Carolina Department of Public Instruction, 2014).

Graduation rate. The third dependent variable chosen was the high school graduation rate. The four-year cohort graduation rate is the percentage of students in a school district who entered the ninth grade in 2009-2010 and who graduated in 2013. Getting students to the point

of graduation is one indicator of potential college enrollment. Thus, graduation rates for each school were considered in this study because they identify the percentage of students who are career and college ready as defined by the North Carolina State Board of Education (2008).

Data Collection and Analysis Methods

All primary data were collected via an electronic survey using Qualtrics survey software to facilitate research survey administration, data collection, and data management. The GMS provided measures of the dimensions of global-mindedness as self-reported by school leaders. An introductory letter was included in the initial email sent to all participants to encourage participant response.

In order to analyze the data for this study, three empirical research questions were reviewed. The three research questions and corresponding hypotheses for this study were:

- Q1: What is the level of global-mindedness among NC public high school principals?
 - a. How do principals view their roles in promoting student global-mindedness?
 - b. What have principals done to support global-mindedness?
 - c. How do the principals' viewpoint and actions relate to their level of global-mindedness?
- Q2: Is the principal's level of global-mindedness, including the total score and each dimension, associated with student achievement in NC public high schools?
 - H_{01} : There is no association between total global-mindedness and the school's average ACT composite score.
 - H_{a1} : There is an association between total global-mindedness and the school's average ACT composite score.

- H₀₂: There is no association between the dimension of responsibility in a principal's global-mindedness and the school's average ACT composite score.
- H_{a2}: There is an association between the dimension of responsibility in a principal's global-mindedness and the school's average ACT composite score.
- H₀₃: There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average ACT composite score.
- H_{a3}: There is an association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average ACT composite score.
- H₀₄: There is no association between the dimension of efficacy in a principal's global-mindedness and the school's average ACT composite score.
- H_{a4}: There is an association between the dimension of efficacy in a principal's global-mindedness and the school's average ACT composite score.
- H₀₅: There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's average ACT composite score.

- H_{a5}: There is an association between the dimension of globalcentrism in a principal's global-mindedness and the school's average ACT composite score.
- H₀₆: There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's average ACT composite score.
- H_{a6}: There is an association between the dimension of interconnectedness in a principal's global-mindedness and the school's average ACT composite score.
- H₀₇: There is no association between total global-mindedness and the school's average EOC composite score.
- H_{a7}: There is an association between total global-mindedness and the school's average EOC composite score.
- H₀₈: There is no association between the dimension of responsibility in a principal's global-mindedness and the school's average EOC composite score.
- H_{a8}: There is an association between the dimension of responsibility in a principal's global-mindedness and the school's average EOC composite score.
- H₀₉: There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average EOC composite score.

- H_{a9}: There is an association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average EOC composite score.
- H_{o10}: There is no association between the dimension of efficacy in a principal's global-mindedness and the school's average EOC composite score.
- H_{a10}: There is an association between the dimension of efficacy in a principal's global-mindedness and the school's average EOC composite score.
- H_{o11}: There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's average EOC composite score.
- H_{a11}: There is an association between the dimension of globalcentrism in a principal's global-mindedness and the school's average EOC composite score.
- H_{o12}: There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's average EOC composite score.
- H_{a12}: There is an association between the dimension of interconnectedness in a principal's global-mindedness and the EOC composite score.

- H₀₁₃: There is no association between total global-mindedness and the school's graduation rate.
- H_{a13}: There is an association between total global-mindedness and the school's graduation rate.
- H₀₁₄: There is no association between the dimension of responsibility in a principal's global-mindedness and the school's graduation rate.
- H_{a14}: There is an association between the dimension of responsibility in a principal's global-mindedness and the school's graduation rate.
- H₀₁₅: There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's graduation rate.
- H_{a15}: There is an association between the dimension of cultural pluralism in a principal's global-mindedness and the school's graduation rate.
- H₀₁₆: There is no association between the dimension of efficacy in a principal's global-mindedness and the school's graduation rate.
- H_{a16}: There is an association between the dimension of efficacy in a principal's global-mindedness and the school's graduation rate.
- H₀₁₇: There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's graduation rate.
- H_{a17}: There is an association between the dimension of globalcentrism in a principal's global-mindedness and the school's graduation rate.

- H₀₁₈: There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's graduation rate.
- H_{a18}: There is an association between the dimension of interconnectedness in a principal's global-mindedness and the school's graduation rate.
- Q3: Do other factors influence the association, or lack of association, between global-mindedness and student achievement?
 - a. Is there an association between the independent variable, global-mindedness, and the following factors:
 1. School location (LOCALE)
 2. Receiving free and reduced price lunch (FRL)
 3. Student race/ethnicity (ETHNIC)
 4. School size – average daily membership (ADM)
 5. Gender
 6. Race/ethnicity
 7. Country of birth
 8. Travel and time outside of country of birth
 9. Languages spoken
 10. Years of experience as a principal at current school
 11. Years of experience as a principal
 12. Years of experience as an educator

- b. Is there an association between the dependent variables, student achievement (ACT, EOC, Graduation rate), and the following factors:
 - 1. School location (LOCALE)
 - 2. Receiving free and reduced price lunch (FRL)
 - 3. Student race/ethnicity (ETHNIC)
 - 4. School size- average daily membership (ADM)
 - 5. Gender
 - 6. Race/ethnicity
 - 7. Country of birth
 - 8. Travel and time outside of country of birth
 - 9. Languages spoken
 - 10. Years of experience as a principal at current school
 - 11. Years of experience as a principal
 - 12. Years of experience as an educator
- c. Is global-mindedness predictive of student achievement in the context of other factors, including school and principal characteristics as identified in a and b above?

Survey piloting. For this research study, two surveys were developed through Qualtrics to address the three research questions. The Odum Institute reviewed both surveys, methodology experts located at the University of North Carolina-Chapel Hill, to ensure consistency and eliminate redundancy. The first survey contained questions as developed by

Hett (1993) in the GMS. The second survey contained questions that were generated using information and concepts gleaned from the literature review on global-mindedness. To ensure that the survey was valid and reliable, the researcher piloted the survey among a group of professionals not associated with the field of education. The information and insight was shared with the researcher and modifications to the survey were made accordingly.

Statistical Analysis Plan

Rationale for mixed methods design. Mixed methods research is considered an important approach for the field of education as it, “offers the potential for deeper understandings of some education research questions that policymakers need answered” (Viadero, 2005, p. 2). Creswell and Plano Clark (2007) define mixed methods research as a methodology that “focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies” (p. 5). The understanding behind using a mixed methods methodology is that the combination of using both qualitative and quantitative approaches gives a more holistic picture than just using one approach alone.

From a methodological perspective, Greene, Benjamin, and Goodyear (2001) argue that if mixed methods research is done purposefully, it increases the validity and credibility of the inferences made, leads to more comprehensive findings and in-depth understandings of the phenomena being studied, and increases perspectives being included in the research. According to Creswell and Plano Clark (2007), there are four major types of mixed methods designs: the Triangulation Design, the Embedded Design, the Explanatory Design, and the Exploratory Design. This study will utilize the Triangulation Design, and more specifically, the convergence model. A graphic representation of the Triangulation Design: Convergence Model (Creswell & Plano Clark, 2007, p. 63) is presented in Figure 8.

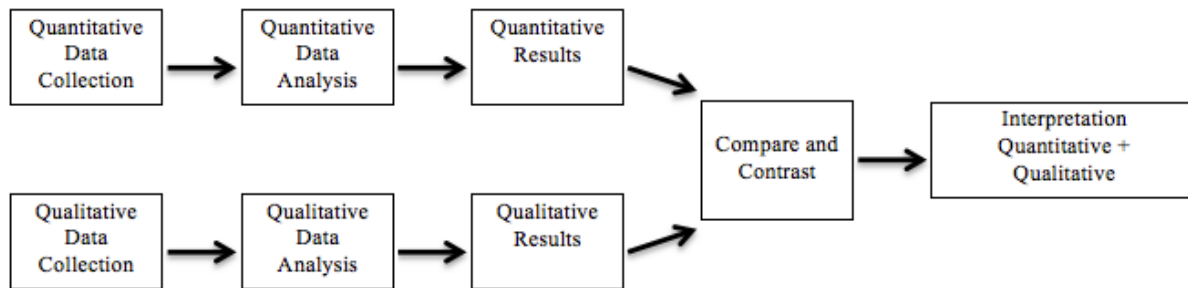


Figure 8: Triangulation Design: The Convergence Model

In the Triangulation Design, qualitative and quantitative methods are collected within a similar timeframe and are given equal weight during analysis (Creswell & Plano Clark, 2007). Further, within the convergence model, the qualitative and quantitative data are collected and analyzed separately, then merged during the interpretation phase. The approach used in this study is also supported by Morse's (1991) concept of simultaneous triangulation, where both qualitative and quantitative data are collected with limited interaction between the two types of data, but the findings from each are used to complement one another during interpretation (Burke Johnson, Onwuegbuzie, & Turner, 2007). According to Creswell and Plano Clark (2007), the purpose of using triangulation is to "end up with valid and well-substantiated conclusions about a single phenomenon" (p. 65).

Quantitative analysis. Results of the on-line survey were automatically tabulated via the Qualtrics survey program as each participant responded. Survey data was downloaded as a Microsoft Excel file and transferred to the Statistical Analysis System® (SAS). Survey data was linked to data from the North Carolina Department of Public Instruction by school code (LEA), such that each observation in the analysis data set contained both survey and school data.

Statistical data was recoded and analyzed via SAS® with descriptive statistics

calculated for GMS, GMS subscores, principal demographics, and school characteristics. It was then presented as frequencies or means with standard deviations and median values, as appropriate. Frequencies of data directed the necessary reduction methods to form categories of meaningful data. For example, if there were fewer than five responses in any categorical variable, categories were combined, thus reducing the number of original categories. The raw data were examined and continuous variables tested for normality assumptions to direct the use of parametric versus non-parametric methods. The statistical analysis was performed in a stepwise fashion, starting with descriptive univariate statistics, followed by bivariate analysis, and finally multivariable regression analysis. While the results of the descriptive, univariate analysis were used to identify the appropriate parametric or non-parametric methods and to develop the multivariable models, the general approach was: (1) describe the characteristics of each variable considered by computing either frequencies or measures of central tendency and variance to determine normality assumptions with the use of the Shapiro-Wilk statistic (W); (2) determine the associations between independent and dependent variables with either the use of correlation coefficients (Spearman's or Pearson's as appropriate) for continuous independent and dependent variables, chi-square analyses for categorical data, and pooled t-tests or Wilcoxon Signed Rank Tests for two dichotomous groups and continuous dependent variables, and Analysis of Variance (ANOVA) or Kruskal-Wallis tests for more than two independent groups. All analyses were performed as two-tailed tests with an a-prior type I error rate of 0.05 as specified by the null and alternative hypothesis. There were no planned adjustments in the probability levels (such as Bonferroni correction) for multiple comparisons as all hypotheses to be tested were pre-specified.

The inclusion of selected variables in the models was based on the bivariate analyses as

previously described. In general, any variable with a p-value of 0.10 or less was considered as a predictor for inclusion. Examples of potential regression models developed took the form of:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots + \epsilon, \text{ where}$$

Y = Dependent, e.g. ACT composite score

x_1 = GMS

x_2 = Predictor variable 2, e.g. Gender

x_3 = Predictor variable 3, e.g. Principal's years as an Educator

ϵ = error

Because this research focused on quantifying the relationship of global-mindedness with student achievement, multiple regression models included a term for GMS while others removed the GMS to allow for comparison of models with and without the GMS. Other predictor variables were chosen from the school attributes and principal characteristics previously described. Because predictor variables consisted of both continuous and categorical values, it was necessary to create indicator variables (sometimes referred to as dummy variables) or reference values. For example, in the case of a principal's gender, a variable was created where

$$\text{Female} = \begin{cases} 0 & \text{for male principal} \\ 1 & \text{for female principal} \end{cases}$$

Confounding and interaction terms were also considered in the models. While a confounding variable is one that is associated with the independent variable (i.e. GMS) and is associated independently with the outcome variable (student achievement), an effect modifier is associated with only the independent or dependent variable. Following the methods described by Kleinbaum, Muller, Kupper, and Nizam (1997), interaction terms (effect modifiers) were

assessed before confounding terms. Variables considered for potential inclusion in the models were chosen from the following list in which there was statistically significant trend ($p < 0.10$) found in the bivariate analyses: school locale, percent receiving free and reduced price lunch, percent minority, school size, and principal's gender, race/ethnicity, country of birth, time outside the country of birth, number of fluent languages, years in current position, years of experience as principal, and years of educational experience.

To address the research questions, a number of multivariable regression models were evaluated. Using a step-wise approach, the partial F-test was used to determine whether additional independent variables significantly added to the prediction of the dependent variable given the other independent variables already in the model. This approach led to a reduced number of important predictors of student achievement.

Qualitative analysis. Qualitative research, because of its exploratory nature, can provide researchers with important information to understand social phenomena. With the interpretative nature of qualitative research (Creswell, 2009), the researcher must in some way interpret the data through an analysis procedure. Therefore, the analysis of the qualitative data collected in a study is an important step in the research process (Leech & Onwuegbuzie, 2008). In order to analyze the data of a qualitative research study, the researcher must organize and prepare the data for analysis being conducted in the study (Creswell, 2007).

In order to analyze data using the qualitative descriptive method, a qualitative content analysis was used. This type of analysis relies on the use of coding systems, which are developed to correspond with the data to be analyzed (Sullivan-Bolyai, Bova, & Harper, 2005). Qualitative content analysis involves examining language with the purpose of classifying text into categories (Hsieh & Shannon, 2005). Specifically, a directed content analysis was utilized.

This particular type of content analysis is used when a guiding conceptual framework already exists that can be used in determining the initial coding scheme (Hsieh & Shannon, 2005).

Directed content analysis is more structured than conventional content analysis and involves the development of coding categories using previous research or theory, which is in turn used to develop operational definitions (Hsieh & Shannon, 2005). One strategy available to those using directed content analysis is to immediately begin coding using the predetermined codes (Hsieh & Shannon, 2005). Any data that cannot be coded is later analyzed to determine if additional categories need to be developed. Specifically, according to Downe-Wamboldt (1992) the proceeding eight steps of content analysis were followed:

1. Select the unit of analysis
2. Create and define the categories
3. Pretest the category definitions and rules
4. Assess reliability and validity
5. Revise the coding rules as necessary
6. Pretest the revised category scheme
7. Code all the data
8. Reassess reliability and validity

(Downe-Wamboldt, 1992, p. 315).

The qualitative content analysis approach to coding has been used in psychology, sociology, political science and the health sciences, and by researchers in the field of education (Saenz & Moses, 2010; Silova & Brehm, 2009). Such qualitative descriptive methods, with corresponding content analysis, were appropriate for this study because, while no method is

entirely free from subjectivity, it was low-inference and allowed for a comprehensive summary of the data. This approach also allowed for the use of data that was structured, as well as for the review of documents (North Carolina Department of Instruction, 2006). Sullivan-Bolyai et al. (2005) report that the outcomes of this type of qualitative analysis result in a “straight description of the data organized in a way that ‘fits’ the data” (p. 128).

A content analysis procedure was used in this study. Content analysis is a procedure that provides researchers with a method to analyze written, verbal, or visual communication messages (Cole, 1988). Content analysis can be a process that is as simple as counting key words in a context that identifies the frequency and consistency of word usage (Stemler, 2001) or as complex as examining the language to classify large amounts of text into a smaller number of categories to extract meaning (Weber, 1990). Content analysis helps a researcher sift through large amounts of textual data in a systematic process (Stemler, 2001) and is a flexible method for analyzing text data (Cavanagh, 1997). Miles and Huberman (1994) refer to the content analysis process as “data reduction” (p. 204). “Data reduction involves selecting, focusing, simplifying, abstracting, and transferring data” that is in a text format (Miles & Huberman, 1994, p. 204).

Upon reading the qualitative data from the *Principal Demographic Questionnaire*, the researcher began a detailed analysis with a coding process. The researcher read the transcripts in their entirety several times, thus allowing for an immersion in the data (Creswell, 2009; Hseih & Shannon, 2005; Saldana, 2009). While reading the text, the researcher highlighted words and phrases that captured key words or concepts associated with global awareness and 21st century learning that are outlined in *Future-Ready Students: Goals for the 21st Century* (Hseih & Shannon, 2005; Saldana, 2009).

Next, notes and memos were made while reading the text again, noting thoughts and ideas about the text as a whole and the initial words and phrases highlighted as key concepts (Hseih & Shannon, 2005). Codes were assigned to the highlighted text to organize the concepts into categories (Hseih & Shannon, 2005; Saldana, 2009) to reduce the number of concepts. Saldana (2009) defines a code in qualitative research as “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p. 3). The researcher incorporated Saldana’s (2009) method of coding into the research when identifying and labeling phrases and sections of the data. Codes helped the researcher combine a large amount of data together into more meaningful units of information (Miles & Huberman, 1994). Using content analysis techniques, the researcher counted themes and reported them as frequencies. As Glesne (2006) explains, researchers will find themes in their data, but must “find ways to make connections that are ultimately meaningful to themselves and the reader” (p.165). Definitions for each theme were developed and reported in the findings. The research findings were presented in table and text form, as will be shown in Chapter Four.

While it is clear that some questions required coding in order to tease out relevant concepts, it was important to situate this process within a larger context. Given that the research in this study focused on the impact that principals have on student achievement, and given that measurement of this impact occurred within a 21st century framework, it was necessary to explain how this 21st century framework applied to the treatment of the data (see Chapter 5).

Researchers should justify that the information presented in their study is trustworthy. Throughout a study, the researcher must convey in a clear description the research design, the data collection methods, and the analysis procedures used to interpret the data. If conveyed

accurately, the researcher can ensure the study has established credibility. If a research study is credible, it likely measured what it intended to measure (Shenton, 2004). Lincoln and Guba (1985) suggest that ensuring the credibility of a research study is one of the most important tasks to ensure the trustworthiness of the study.

In a qualitative research study, the researcher is the main instrument for the data collection (Creswell, 2009). One way to reduce researcher bias in the study and increase the study's trustworthiness is through a reflective journal. In a reflective journal, any bias the researcher has about the study can be bracketed (Moustakas, 1994) to expose the bias and allow for transparency (Jootun, McGhee, & Marland, 2009) of thoughts and ideas. Journal writing provides the researcher with a method to get feedback about the study (Jootun et al., 2009). By continually being reflective, the researcher can easily distinguish between the ideas that came from the participant and those that came from the researcher (Williams & Morrow, 2009). According to Jootun et al. (2009), all qualitative research should have a reflective strategy imbedded into the research design. Reflecting on the research and trying to understand how biases could have an impact on the research findings can add credibility to a study (Jootun et al., 2009).

For this study, the researcher wrote in a reflective journal about any thoughts and feelings of the survey data and analysis of the study. Reviewing the journal enabled the researcher to focus on areas that may have been affected by the researcher's biases.

Another method of increasing the trustworthiness and credibility of this study was to ask experienced researchers for guidance and direction, which the researcher did during the development of the survey question protocol. The guidance and insight of the experienced researchers helped to maintain the quality of the research and contributed to the ethical

collection and analysis of the research data.

Another method used to increase the trustworthiness and credibility of the study was the researcher's unfamiliarity of the participants. Prior to the study, the researcher did not know any of the participants professionally or personally. Therefore, the analysis was not influenced by previous knowledge of the participants or their views about global awareness.

The goal of a qualitative researcher is to understand the complexity and richness of the phenomenon being studied (Denzin & Lincoln, 2005). Any finding in a research study is a result of a researcher's interpretation. Having methods and strategies as described above embedded in the research design increases the trustworthiness and credibility of the research findings.

Summary

This study analyzed the relationship between North Carolina high school principals' overall global-mindedness – including each of its dimensions (responsibility, cultural pluralism, efficacy, globalcentrism, interconnectedness)— and student achievement using Hett's (1993) GMS. In addition, principals were asked to respond to whether or not they saw themselves as promoting global awareness in their schools, and what other factors they thought were important in a school's 21st century learning.

This study sought to involve the entire population of high school principals within the state of North Carolina. The data were collected by means of a self-reported survey sent to all high school principals. Quantitative data were analyzed through SAS®, and qualitative data were analyzed through coding methods and emerging themes to answer the research questions posed.

Chapter Four: Data Analysis

The purpose of this study was to explore the relationship, if any, between the overall global-mindedness of North Carolina public high school principals and the level of student achievement in their schools. Using a mixed methods research design, this study also examined the relationships between global-mindedness and demographic variables of high school principals and school characteristics. Hett's (1993) GMS instrument, which measures responsibility, cultural pluralism, efficacy, globalcentrism, and interconnectedness, was used to determine the level of global-mindedness in participating principals.

The target population for this study consisted of high school principals in North Carolina for the school year 2014-15. Qualtrics software was employed for survey administration, management, and data collection. Data were organized by research hypotheses and all analyses were conducted using SAS®. The researcher employed the use of an invitational letter outlining the voluntary nature of the study. This invitation was sent to all prospective participants, which also required consent to participate through a hyperlinked URL address to begin the survey. Once consent was granted, the time commitment to complete the 39- item survey was approximately 14 minutes with a survey return window of eight weeks. During this time, reminder emails were sent to all participants to encourage participation in the study.

This chapter provides information regarding the results, including descriptive statistics of the respondents, an outline of the responses to the three research questions, and corresponding null hypotheses. Tables, charts, and graphs are utilized within this chapter to facilitate communication of the findings from the statistical and qualitative analyses. In

addition, this chapter provides information regarding the statistical methods employed for analysis and also identifies statistical results to assess the strength of relationships between the variables.

The study was guided by the following three research questions:

- Q1: What is the level of global-mindedness among NC public high school principals?
 - a. How do principals view their roles in promoting global-mindedness?
 - b. What have principals done to support global-mindedness?
 - c. How do the principals' viewpoint and actions relate to their level of global-mindedness?
- Q2: Is the principal's level of global-mindedness, including the total score and each dimension, associated with student achievement in NC public high schools?
- Q3: Do other factors influence the association, or lack of association, between global-mindedness and student achievement?

Measurement Tool

The Global-Mindedness Scale (GMS) developed by Hett (1993) defines global-mindedness as “a worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members and reflects this commitment through demonstrated attitudes, beliefs, and behaviors” (p. 143). Through her research and the development of an instrument designed to measure the presence of global-mindedness, Hett identified five dimensions: cultural pluralism, efficacy, globalcentrism, interconnectedness, and responsibility.

The 39-item survey was comprised of Hett's (1993) Global-Mindedness Scale (GMS)

and nine demographic questions related to the attributes of each principal's personal and professional experiences.

The researcher employed a five point Likert-type scale, with 1 representing strongly disagree and 5 representing strongly agree, to measure the dimensions of global-mindedness as well as the total global-mindedness score (see Appendix D). The GMS (items 1-30) contained nine reversed items that required a recoding of values to provide orientation of the same direction. The process for recoding was conducted using SAS® programming logic.

Table 3 depicts the key variables used in the data analysis. These variables were obtained from the survey instruments and linked to school characteristics obtained from the North Carolina Department of Public Instruction. The table contains the type of variable (i.e. independent, dependent, confounder or effect modifier) as well as the description and range of potential values for each.

Table 3. Data Description

Variables	Type	Description
<u>Global-Mindedness</u>		
GM Total	Independent	Range: 30 - 150
GM Responsibility	Independent	Range: 7 - 35
GM Cultural Pluralism	Independent	Range: 8 - 40
GM Efficacy	Independent	Range: 5 - 25
GM Globalcentrism	Independent	Range: 5 - 25
GM Interconnectedness	Independent	Range: 5 - 25
<u>Student Achievement</u>		
ACT Composite Score	Dependent	Range: 1 - 36
EOC Composite Score	Dependent	Range: 0 - 100%
School Graduation Rate	Dependent	Range: 0 - 100%

Variables	Type	Description
<u>School Characteristics</u>		
School Locale	Potential confounder or effect modifier	11 City: Large 12 City: Midsize 13 City: Small 21 Suburb: Large 22 Suburb: Midsize 23 Suburb: Small 31 Town: Fringe 32 Town: Distant 33 Town: Remote 41 Rural: Fringe 42 Rural: Distant 43 Rural: Remote
Free and Reduced Price Lunch	Potential confounder or effect modifier	Percentage
Student Race/Ethnicity	Potential confounder or effect modifier	White, Black, Hispanic, American Indian, Asian, Pacific Islander, Multi
School Size	Potential confounder or effect modifier	Average Daily Membership
<u>Principal Background</u>		
Gender	Potential confounder or effect modifier	1= M; 2= F
Race/Ethnicity	Potential confounder or effect modifier	White, Black, Hispanic, American Indian, Asian, Pacific Islander, Multi
Country of Birth	Potential confounder or effect modifier	1= USA; 2= Other
Travel outside country of birth	Potential confounder or effect modifier	0= No; 1= Yes
Time Outside Country of Birth	Potential confounder or effect modifier	0= No international experience 1= 1 - 30 days 2= 31 - 60 days 3= 61 - 90 days 4= 91 days - 180 days

Variables	Type	Description
		5= 181 - 365 days 6= up to 2 years 7= more than 2 years
Languages Spoken	Potential confounder or effect modifier	1= Fluent in 1 language 2= Fluent in 2 languages 3= Fluent in 3 or more languages
Years of Experience as a Principal at Current School	Potential confounder or effect modifier	Range: 0 - 40 (approximate)
Years of Experience as a Principal	Potential confounder or effect modifier	Range: 0 - 40 (approximate)
Years of Experience as an Educator	Potential confounder or effect modifier	Range: 0 - 60 (approximate)

North Carolina School Demographics

Table 4 contains a description of all North Carolina high schools as obtained from the North Carolina Department of Public Instruction with a side-by-side comparison of the school characteristics associated with the principals who responded to the survey. More than half of all North Carolina schools (56.4%) are located in rural areas, and the majority of respondents (70.3%) also represent rural schools. Similarities in school characteristics from responding principals compared to the state are seen in percentage of students receiving free and reduced price lunches (19% and 21%) and in those students classified as minority or non-White (41% and 45%).

The average school size, as measured by average daily membership, is 752 in the sub-set of schools represented by responding principals compared to approximately 100 more students per school in all North Carolina schools (mean 864). More than half of principals are male (63% and 64%) in both the responding groups and in all public high schools. The average ACT

composite scores, EOC composite scores, and graduation rates are very similar between all North Carolina schools and those in which the principal participated in the survey. The average ACT composite score is slightly more than 18 (18.2 and 18.3), the average EOC composite score is approximately 42 (42.3 and 42.0), and the graduation rate is 87% in both groups.

Table 4. *Profile of NC High Schools and of Respondents*

Variable	NC High Schools		NC High Schools which responded (n=101)	
	Frequency (%)	Mean (SD)	Frequency (%)	Mean (SD)
School Locale				
City: Large	53 (11.0)		6 (5.9)	
City: Midsize	67 (13.9)		7 (6.9)	
City: Small	18 (3.7)		3 (3.0)	
Suburb: Large	3 (0.6)		0 (0.0)	
Suburb: Midsize	33 (6.9)		6 (5.9)	
Suburb: Small	0 (0.0)		0 (0.0)	
Town: Fringe	7 (1.5)		4 (4.0)	
Town: Distant	26 (5.4)		4 (4.0)	
Town: Remote	3 (0.6)		0 (0.0)	
Rural: Fringe	137 (28.4)		30 (29.7)	
Rural: Distant	111 (23.0)		34 (33.7)	
Rural: Remote	24 (5.0)		7 (6.9)	
Free and Reduced Price Lunch (%)		48.3 (20.66)		48.4 (18.81)
Student Race/Ethnicity (%)				
Non-White		45.4		41.3
White		54.6		58.7
School size (ADM)		864 (579)		752.4 (534.83)
Number of Teachers		56.2 (34.18)		50.5 (33.73)
Principal Gender				
Male	299 (64.2)		64 (63.4)	
Female	167 (35.8)		37 (36.6)	

Variable	NC High Schools		NC High Schools which responded (n=101)	
	Frequency (%)	Mean (SD)	Frequency (%)	Mean (SD)
ACT Composite		18.3 (2.23)		18.2 (1.84)
EOC Composite (%)		42.3 (16.45)		42.0 (14.54)
Graduation Rate (%)		87.2 (0.08)		87.3 (0.07)

Response Rate

The electronic survey used to measure the presence of the dimensions of global-mindedness and collect information on demographic variables among North Carolina high school principals was disseminated to 482 principals. According to Qualtrics survey management, 15 total emails were undeliverable, resulting in a total of 467 prospective participants. Of the 467 principals who received an invitation to participate in the survey, responses were received from 101, with 5 principals opting out on the initial invitation. This resulted in a response rate of 22%. Exploration of the response status showed no statistically significant differences in response rates by principal's gender, the number of teachers in the school, the percentage of students receiving free and reduced price lunch, graduation rate, ACT composite score, or EOC composite score. However, responders tended to be principals of schools with lower average daily membership (752.4 vs. 893.8, $p=0.0312$).

Population and Demographic Analysis

The dataset used in this study was derived from the 101 North Carolina high school principals who provided responses to the (a) The Global-Mindedness Scale (GMS), and (b) Principal Background Questionnaire. Table 5 includes demographic information from this sample.

Table 5. *Descriptive Statistics for NC High School Principals Responding to Survey (n=101)*

Variable	Frequency (%)	Mean (SD)
Gender		
Male	64 (63.4)	
Female	37 (36.6)	
Age (years)		45.5 (8.1)
Race/Ethnicity		
White	79 (78.2)	
Black	14 (13.9)	
Hispanic	0 (0.0)	
American Indian	1 (1.0)	
Asian	0 (0.0)	
Pacific Islander	0 (0.0)	
Multi-response	1 (1.0)	
Not Answered	6 (5.9)	
Country of Birth		
USA	94 (93.1)	
Other (Canada)	2 (2.0)	
Not Answered	5 (5.0)	
Travel Outside Country of Birth		
No	17 (16.8)	
Yes	64 (63.4)	
Not Answered	20 (19.8)	
Time Out of Country of Birth		144.6 (1171.2)
None	17 (16.8)	
1 – 30 days	69 (68.3)	
31 – 60 days	4 (4.0)	
61 – 90 days	4 (4.0)	
91 – 180 days	3 (3.0)	
181 – 365 days	1 (1.0)	
366 days – 2 years	1 (1.0)	
>2 years	2 (2.0)	
Fluent Languages		
1 language	95 (94)	
2 languages	6 (5.9)	
3+ languages	0 (0.0)	

Variable	Frequency (%)	Mean (SD)
Years in Current Position		3.6 (2.93)
1 or fewer	15 (14.9)	
>1 to 2	24 (23.8)	
>2 to 3	7 (6.9)	
>3 to 4	14 (13.9)	
>4 to 5	9 (8.9)	
>5 to 10	9 (8.9)	
>10	4 (4.0)	
Not answered	19 (18.8)	
Years as Principal		10.3 (6.36)
1 or less	2 (2.0)	
>1 to 2	5 (5.0)	
>2 to 3	2 (2.0)	
>3 to 4	4 (4.0)	
>4 to 5	8 (7.9)	
>5 to 10	24 (23.8)	
>10	34 (33.7)	
Not answered	22 (21.8)	
Years in Education		20.7 (8.32)
1 or less	0 (0.0)	
>1 to 2	0 (0.0)	
>2 to 3	3 (3.0)	
>3 to 4	0 (0.0)	
>4 to 5	0 (0.0)	
>5 to 10	6 (5.9)	
>10 to 15	11 (10.9)	
>15 to 20	21 (20.8)	
>20	38 (37.6)	
Not answered	22 (21.8)	

Data from continuous responses were subsequently re-coded into the specified categories. For example, respondents were asked to record their number of years of experience in their current position, and these values were subsequently re-coded into intervals of less than one year, more than one year to two years, etc. Principals who did not provide an answer to the number of days spent out of the country were assigned the median value. This method of

imputation was compared to results whereby the missing data was not used in the analysis.

When comparing the two methods, there was no discernable difference; therefore, the researcher chose imputation as the method in all subsequent analyses.

Survey respondents were more likely to be male, representing slightly more than half of the sample (63.4%). The majority of respondents were White (78%), with almost 14% identifying as African-American; only two principals indicated their race and ethnicity as another category. While more than 90% of principals indicated they were born in the USA, a majority (63%) reported having traveled internationally. However, when asked to identify the number of days they had spent in other countries, only 46 principals responded, yielding an average of 143 days spent outside the country of birth. A few respondents indicated they had spent more than 1 year outside their country of birth (n=3). Six principals indicated being fluent in more than one language. When assessing the number of years of experience, 15 percent indicated they had been in their current position for less than one year. However, only two principals listed their total number of years as a principal or assistant principal as one year or less. All principals who answered the question regarding their total number of years in educational position tended to indicate a longer educational career, with more than one-third having 20 or more years of experience.

Research Questions

To address the three primary research questions that guided this study, a series of analyses were conducted. The first question was addressed through three types of analyses: quantitative analysis, qualitative analysis that consisted of two questions, and a combination of qualitative and quantitative methods (mixed methods).

Research question 1. The first question was addressed through a characterization of the response scores to the survey. Univariate data were summarized and presented in aggregate form as illustrated in Table 6, as well as graphically in Figure 9. Although 101 responses were received, 12 principals submitted partial answers to the GMS, decreasing the sample size to 89. Listwise deletion was the method chosen to deal with missing data due to the number of variables and outcome measures that this research study employed. In order to obtain a total GMS score, all 30 questions on the GMS were vital for the respondent to answer. Additionally, in order to obtain an accurate global-mindedness dimension score, all questions relating to that dimension had to be answered in order for the results to be valid.

As shown in Table 8 and Figure 9, the range of scores computed for the total global-mindedness score was from 85 to 140, with a mean score of 110.50 with a standard deviation of 12.66.

Table 6. Total Global-Mindedness Scores Among NC High School Principals

n	Range	Mean (SD)	Median	Mode
89	85 – 140	110.5 (12.66)	109.0	101.0

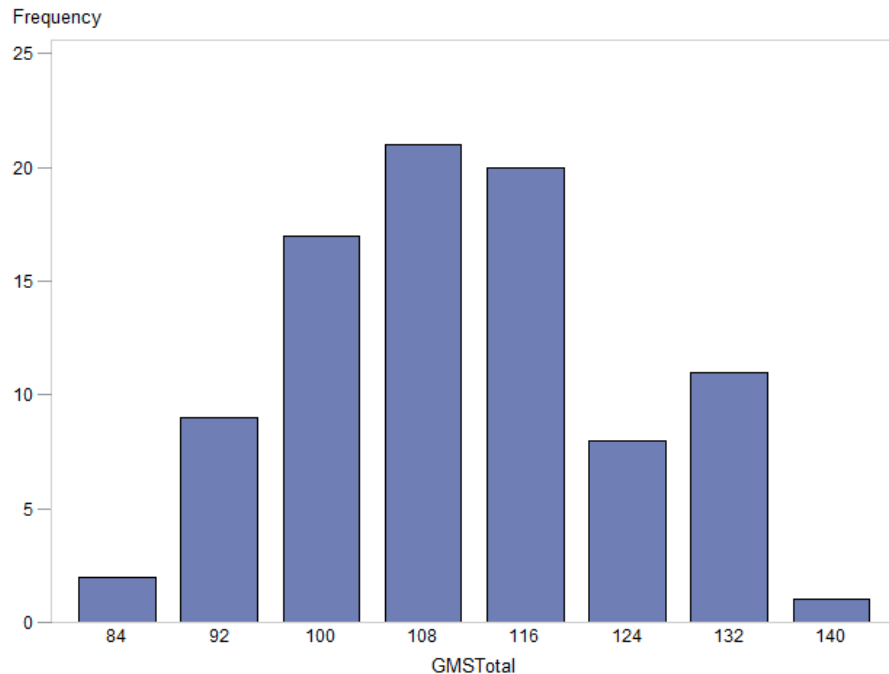


Figure 9: Total Global-Mindedness Scores Among NC High School Principals

The normality of the total GMS was confirmed with the use of Shapiro-Wilk test ($W=0.98$, $p<0.1967$), thereby permitting the use of parametric methods in subsequent analyses.

These scores were similar to other studies employing the GMS. Smith (2008) studied North Carolina extension agents in the Cooperative Extension Service ($n=292$) and found the mean score to be 108.02. Kehl and Morris (2008) studied three different groups of study abroad students at the university level. They found the “intending to study abroad” group had a mean score of 114.07 with a standard deviation of 10.78; the “short term study abroad” group had a mean score of 112.57 with a standard deviation of 13.05; and the “semester-long study abroad” group had a mean of 118.50 with a standard deviation of 12.13.

Research questions 1(a) and (b). These two open-ended questions addressed what principals had done in their schools to support global-mindedness and how these actions had influenced their global viewpoints (i.e. global awareness). The responses were coded to identify

frequency and reported per item. In adherence to the ethics of social science regarding anonymity, pseudonyms were used to refer to respondents in this study.

Coding procedures and data analysis. Saldana (2009) defines a code in qualitative research as “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p. 3). As discussed in Chapter Three, this study incorporated Saldana’s method of coding into the research when phrases and sections of the data were identified and labeled.

Coding and recoding the data helped to identify patterns. From these coding sheets, the data were re-categorized and counted as frequencies according to the predetermined themes as derived from the *Future-Ready Students: Goals for the 21st Century* document. These themes were not part of the coding terms themselves (Saldana, 2009), but followed the qualitative analysis as set forth in Chapter Three.

The participants’ responses to the survey questions provided descriptions and perceptions of their leadership in global awareness paradigm shift. During the analysis phase, the coding allowed identification of words, phrases, and thoughts that were similar and different among the participants. These participants’ answers were grouped according to the following five categories: (1) Student Preparation; (2) Teacher Preparation; (3) Supportive Learning Environments; (4) Collaboration with Other Stakeholders; and, (5) Resources. Table 7 shows the definitions for each theme.

Table 7. *Emergent Themes and Definitions*

Theme	Common Words/ Phrases	Definition
Student Preparation	Student understanding; skills; globally competitive; global	Ensuring all students are well prepared to collaborate and compete with their peers in the United States and abroad through the use

Theme	Common Words/ Phrases	Definition
	citizenship; growth; opportunities; curriculum; real-world application	of a rigorous curriculum with a global focus, assessments that measure learning and skills, and varied opportunities that lead to a global awareness.
Teacher Preparation	Professional development; training; promote global awareness; hiring; accountable; evaluations; model/modeling	Preparing teachers with the necessary skills and knowledge to help students be successful in the 21 st century using professional development, student data, and teacher evaluations/observations.
Supportive Learning Environments	School culture; shared vision; conversation; foster growth; character education; cultural awareness	Fostering a school culture in which students feel safe, relaxed, and willing to take risks, through the development of character education, and community/global awareness and involvement.
Collaboration with Other Stakeholders	Community service; collaborate; broaden knowledge/understanding; partnerships	Working in partnerships with others (parents, businesses, other schools) to promote the culture that supports student success in the 21 st century.
Resources	Tools; support; technology	Ensuring that students and educators have the tools (technological, financial) necessary to support student learning in the 21 st century classroom.

The researcher coded the open-ended responses looking for key terms or phrases in the responses. A comparison of the multiple methods and evaluations identified the frequently repeated responses. Using a spreadsheet function, the researcher then created a formula to generate the number of respondents that exemplified the common themes for each item.

Question 1(a) findings. The first open-ended item examined how principals view their role in promoting global awareness. This open-ended item received 57 responses. Of those responses, 58% included *Teacher Preparation* as part of their response (Table 10). Other responses with at least 30% of the respondents including the theme were *Student Preparation* (39%) and *Supportive Learning Environment* (33%).

Table 8. *Frequency of Responses to Question 1A (n=57)*

Theme	Frequency (%)
Student Preparation	22 (39.0)
Teacher Preparation	33 (58.0)
Supportive Learning Environments	19 (33.0)
Collaboration with Other Stakeholders	7 (12.0)
Resources	5 (9.0)

As stated in previous chapters, principals in North Carolina are expected to lead schools in preparing students for the 21st century. Therefore, it was crucial to ask them to summarize what preparing students for the 21st century meant, and how specifically they viewed their roles in promoting this global awareness shift, in order to study the relationship between global-mindedness and student achievement.

Theme 1: Student preparation. In thinking about preparing students for a successful life in the 21st century, many principals mentioned the need to provide opportunities that directly helped in this preparation. Opportunities were described as being collaborative in nature, with real-world application. Linda, a principal of a small, rural high school, stated,

I see myself as a continuous learner and I am learning how to be a more responsible global citizen. In my school, I try to create opportunities for dialogue among students and staff, bring in guest speakers, allow students exploratory experiences, and have students connect with their peers from around the globe using technology in the

classroom.

Theme 2: Teacher preparation. While some principals captured the essence of global awareness in terms of how they may better prepare the students they served, others defined it in a similar, yet significantly different way. They spoke of providing teachers with a global perspective, global awareness, cultural awareness, or just generally, a better understanding of others. Specifically, the term “modeling” or “being a model” for teachers was used as a way to help steer a school in a globally aware direction. Principal Bonnie, an experienced educator with over 15 years of service, explained by writing, “As the instructional leader of the school, it is important that I model a global awareness and provide opportunities for faculty to be trained and exposed to diverse populations.”

Another commonality within the theme of *Teacher Preparation* in this global awareness shift was the use of the teacher evaluation as a means to measure and hold teachers accountable. Charles, a principal in a midsized suburban school, wrote, “Through teacher evaluations, [I] make sure teachers are engaging students in learning how to be globally-aware citizens; it is part of the teaching standards. From this perspective, my role is holding teachers accountable for this.”

Theme 3: Supportive learning environments. Creating an encouraging school culture where 21st century learning integrated with global awareness was mentioned by a 33% of responding principals. Being able to foster such an environment was echoed in an urban principal’s answer: “I see the principal as being responsible for developing a culture within the school that promotes understanding and affirmation of different cultures that are represented within the school community and the community at large.”

Other principals made statements related to school culture in the way of creating a school where it is important to promote awareness. Interestingly, another principal from a racially diverse, urban high school wrote, “Awareness is a daily issue. Being aware of the world around you and what is occurring in the world creates a natural nexus to the content being taught.”

Theme 4: Collaboration with other stakeholders. In order to best support a global awareness shift in the school, several principals saw the opportunity to enlist the help of others in the school, community, and world. Natasha, a principal at a small, rural school, mentioned this strategic vision when she wrote,

I see myself as a continuous learner and I am learning how to be a more responsible global citizen. In my school, I try to create opportunities for dialogue among students and staff, bring in guest speakers, allow students exploratory experiences, and have students connect with their peers from around the globe using technology in the classroom. I have to place value upon cultivating global citizenship, so that “global-mindedness” becomes a cultural norm within the school community.

Theme 5: Resources. In thinking about the successful preparation of students for the 21st century, a few principals (9%) thought about the resources that they could provide in their schools to teachers and students. These resources included technology, financing, teaching materials, and staff development tools. Sandra, a veteran principal from a rural school, put it simply: “To support and provide resources and the necessary staff development for my teachers.” Echoing Sandra, another veteran educator with over 25 years of experience, stated that, “My role is one of support. I am to provide material, instructional-support, and encouragement for teaching students to be globally aware.”

Question 1(b) findings. The second open-ended item asked what principals have done in their schools to support global awareness. More than half (53%) of the respondents included the theme of *Collaboration with Stakeholders* as part of their answer (see Table 9). Other responses with at least 30% were *Student Preparation* (47%) and *Teacher Preparation* (37%).

Table 9. *Frequency of Responses to Question 1B (n=49)*

Theme	Frequency (%)
Student Preparation	23 (47.0)
Teacher Preparation	18 (37.0)
Supportive Learning Environments	14 (29.0)
Collaboration with Other Stakeholders	26 (53.0)
Resources	8 (16.0)

In order to determine the extent of the relationship between how a principal defined global awareness and how they advocated for it, each principal was asked to give specific examples of implementation in their respective schools. Forty-nine principals presented a number of ways in which they were advocating for global awareness. This question was helpful in gaining a better understanding of the lived experience of each principal— particularly in regards to how seriously they put forth the effort to promote global awareness in their school.

Theme 1: Student preparation. Nearly half (47%) of the principals who responded to this question included an example that directly linked to helping students in their preparation. Commonalities in their answers were: course additions (e.g. language, technology), additional service-learning opportunities, and travel possibilities. Robert, a principal from a rural school, stated, “I added a technology course to better prepare my students for their place in the future economic market.”

Henrik, a principal in a large magnet high school, with over 12 years of leadership at the same school, “created a year long student exchange with a school in China (fourth year) [and]

created a three week French exchange for students (second year).”

Theme 2: Teacher preparation. In thinking about helping teachers deliver a more globally-focused instruction, several principals (37%) responded that they had created or made accommodations for professional development. Some of these opportunities were on campus and delivered to the entire staff, and some were off-campus sessions that teachers could attend. It was interesting to note that principals who were geographically closer to larger cities were the ones who mentioned sending staff to off-campus professional development. For example, Sam, a principal from a mid-size city, wrote,

I have encouraged my teachers to attend worldview in Chapel Hill for staff development. I have encouraged greater cultural awareness via our Spanish classes. I have also tried to start a worldview travel class for our students. I have sponsored field trips outside of our state. Some of our students have never been out of our county.

Along the same lines as Sam, Principal Tobias answered, “I have intentionally encouraged and mandated that teachers incorporate various perspectives into their instructional delivery and presentation. I have set up professional development designed around cultural sensitivity.”

Theme 3: Supportive learning environments. Some principals (29%) answered the question in a way that pointed towards creating a school culture that fosters the development of a globally aware citizen. Many of those answers included things such as the creation of: character education courses, an open-dialogue between students and staff, and programs that give back to the community in some meaningful way. Johanna, a principal in a suburban community, wrote, “We have developed a comprehensive character education program that encourages students to get involved within the community at large in order to better understand their role within the global economy.”

Theme 4: Collaboration with other stakeholders. More so than any other theme, 53% of principals wrote about opportunities they have created in collaboration with other stakeholders (educators, parents, community members) that promote global awareness. Numerous answers included field trips and guest speakers that were designed to further students' and teachers' understanding of other cultures and countries. In the same way, Principal Pierrinne, a well-traveled educator, answered this question by writing,

I have encouraged my teachers to attend worldview in Chapel Hill for staff development. I have encouraged greater cultural awareness via our Spanish classes. I have also tried to start a worldview travel class for our students. I have sponsored field trips outside of our state. Some of our students have never been out of our county.

In a similar fashion, Principal Chris answered by saying that his school is, "Working with exchange programs to bring more students into our rural school."

Theme 5: Resources. Similar to the frequency in question 1(a), the theme of *Resources* was only mentioned by a few principals (16%) in this question. Interestingly, they were principals in rural schools that had higher populations of free and reduced price lunch and of minority students than the state averages. Rob, a principal in one of these schools, said, "Approval for projects that help students provide school supplies and other collections for foreign countries. I also send materials, articles, and information pertaining to 21st century correlations when I come in contact with them."

Gwyn, another principal in a rural school, answered by stating,

I have supported teachers that want to engage in various activities that will support their professional development as well as their students. For example, I have supported teachers to travel abroad for professional development opportunities, and also supported

classrooms to connect with ‘pen pals’ via Skype in a classroom in another country (Denmark).

The data collected for this question also revealed an interesting trend. Principals expressed concerns for the ambiguous language used in state documents (e.g. students being prepared to be globally competitive, educators having professional development in the interconnectedness of the world) and dissatisfaction with a lack of direction and funding given by the North Carolina State Board of Education and the NC Department of Instruction. Will, a principal from a rural school with a low per pupil expenditure, wrote, “The current economic conditions and budget cuts in education have resulted in less participation [by the teachers] in global awareness profession development.”

Several principals acknowledged their challenges in a lack of direction by responding that they have “not done anything yet” and are “still waiting for guidance.” The implications and recommendations from these responses will be further discussed in Chapter Five.

Research question 1(c). For this question, the researcher combined frequency totals for the two qualitative questions for each respondent (see Table 10 and Figure 10). This gave each principal a score between 0-10, with 10 representing the highest level of knowledge and implementation of global awareness as outlined by *Future-Ready Students: Goals for the 21st Century* document. The researcher labeled this score as each principal’s “Global Awareness” score.

Table 10. *Global-Mindedness Scores by Global Awareness Scores (n=60)*

Global Awareness Score	Global-Mindedness Score		
	Frequency	Range	Mean (SD)
1	9	89 – 124	107.3 (11.14)
2	21	92 – 135	112.6 (12.22)
3	10	101 – 132	114.5 (8.86)

Global Awareness Score	Frequency	Global-Mindedness Score	
		Range	Mean (SD)
4	11	99 – 131	114.4 (12.23)
5	6	109 – 140	126.2 (11.99)
6	2	101 – 104	102.5 (2.12)
7	0	0	(Not applicable)
8	1	130 – 130	(Not applicable)
9	0	0	(Not applicable)
10	0	0	(Not applicable)

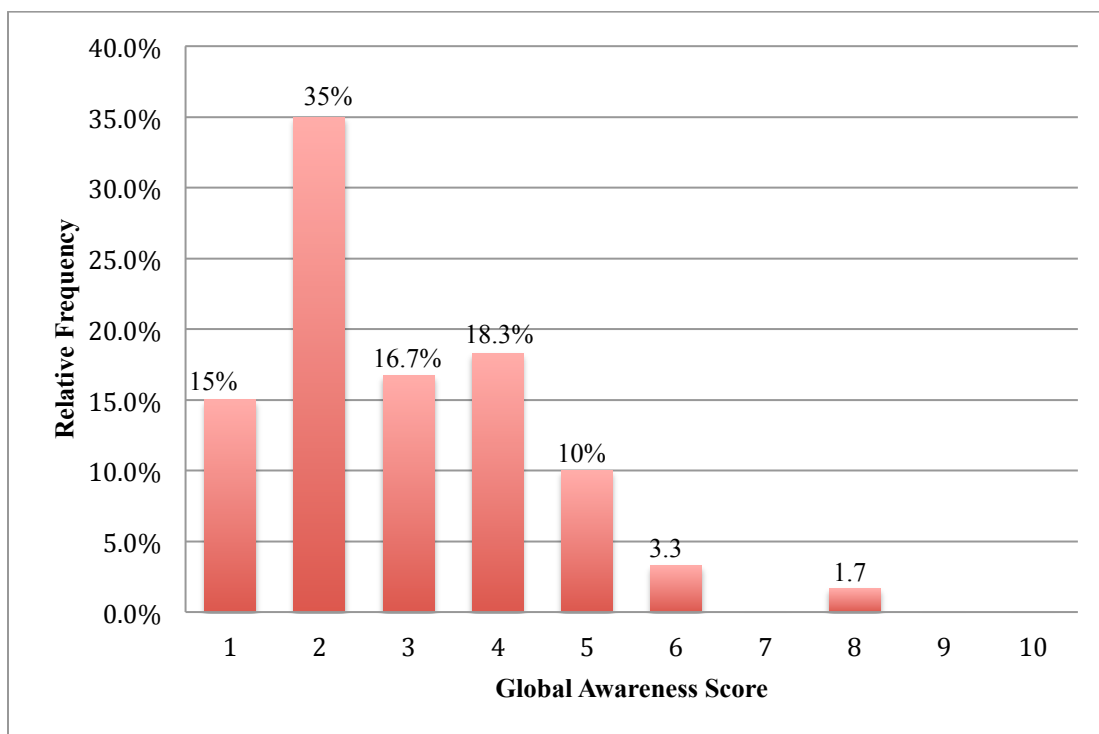


Figure 10: Frequency of Global Awareness Scores

The researcher then looked at total GMS levels for each respondent. The GMS scores were then calculated as mean levels for each group of Global Awareness scores (see Figure 11). Principals who displayed a minor degree of global-mindedness (as measured by Hett's GMS) were also exhibiting behaviors that were indicative of lower levels of global awareness (as measured by the qualitative survey questions). Likewise, principals who scored higher on the

GMS also scored significantly higher in their global awareness behaviors as represented by their global awareness scores. The resulting correlation between the two measures was determined to be 0.28, which was statistically significant ($p=0.0276$).

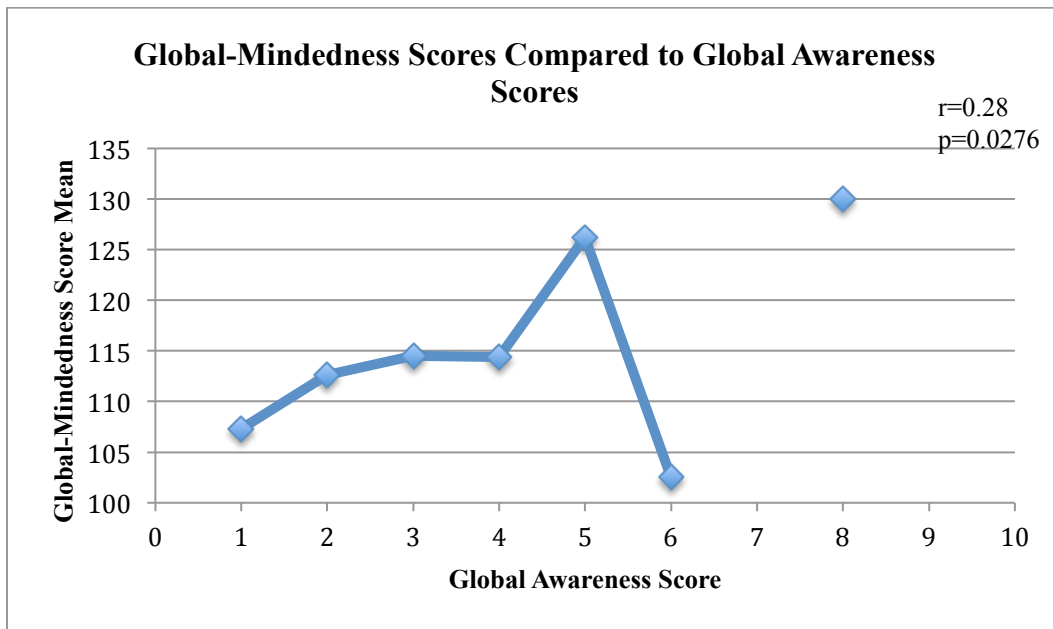


Figure 11: Global-Mindedness Scores Compared to Global Awareness Scores

Research question 2. To address this question, 18 hypotheses were generated to determine the strength of the relationship between the five dimensions of global-mindedness (cultural pluralism, efficacy, globalcentrism, interconnectedness, responsibility) and each measure of student achievement (ACT composite score, EOC composite score, and graduation rate). The hypotheses were as follows:

- H_{01} : There is no association between total global-mindedness and the school's average ACT composite score.
- H_{a1} : There is an association between total global-mindedness and the school's average ACT composite score.

- H_{02} : There is no association between the dimension of responsibility in a principal's global-mindedness and the school's average ACT composite score.
- H_{a2} : There is an association between the dimension of responsibility in a principal's global-mindedness and the school's average ACT composite score.
- H_{03} : There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average ACT composite score.
- H_{a3} : There is an association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average ACT composite score.
- H_{04} : There is no association between the dimension of efficacy in a principal's global-mindedness and the school's average ACT composite score.
- H_{a4} : There is an association between the dimension of efficacy in a principal's global-mindedness and the school's average ACT composite score.
- H_{05} : There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's average ACT composite score.
- H_{a5} : There is an association between the dimension of globalcentrism in a principal's global-mindedness and the school's average ACT composite score.
- H_{06} : There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's average ACT composite score.
- H_{a6} : There is an association between the dimension of interconnectedness in a principal's global-mindedness and the school's average ACT composite score.
- H_{07} : There is no association between total global-mindedness and the school's average EOC composite score.

- H_{a7}: There is an association between total global-mindedness and the school's average EOC composite score.
- H_{o8}: There is no association between the dimension of responsibility in a principal's global-mindedness and the school's average EOC composite score.
- H_{a8}: There is an association between the dimension of responsibility in a principal's global-mindedness and the school's average EOC composite score.
- H_{o9}: There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average EOC composite score.
- H_{a9}: There is an association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average EOC composite score.
- H_{o10}: There is no association between the dimension of efficacy in a principal's global-mindedness and the school's average EOC composite score.
- H_{a10}: There is an association between the dimension of efficacy in a principal's global-mindedness and the school's average EOC composite score.
- H_{o11}: There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's average EOC composite score.
- H_{a11}: There is an association between the dimension of globalcentrism in a principal's global-mindedness and the school's average EOC composite score.
- H_{o12}: There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's average EOC composite score.
- H_{a12}: There is an association between the dimension of interconnectedness in a principal's global-mindedness and the EOC composite score.

- H₀₁₃: There is no association between total global-mindedness and the school's graduation rate.
- H_{a13}: There is an association between total global-mindedness and the school's graduation rate.
- H₀₁₄: There is no association between the dimension of responsibility in a principal's global-mindedness and the school's graduation rate.
- H_{a14}: There is an association between the dimension of responsibility in a principal's global-mindedness and the school's graduation rate.
- H₀₁₅: There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's graduation rate.
- H_{a15}: There is an association between the dimension of cultural pluralism in a principal's global-mindedness and the school's graduation rate.
- H₀₁₆: There is no association between the dimension of efficacy in a principal's global-mindedness and the school's graduation rate.
- H_{a16}: There is an association between the dimension of efficacy in a principal's global-mindedness and the school's graduation rate.
- H₀₁₇: There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's graduation rate.
- H_{a17}: There is an association between the dimension of globalcentrism in a principal's global-mindedness and the school's graduation rate.
- H₀₁₈: There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's graduation rate.

- H_{a18}: There is an association between the dimension of interconnectedness in a principal's global-mindedness and the school's graduation rate.

Data exploration for this second research question was addressed through a series of bivariate analyses. Correlations (r) were computed to assess the strength of the association between the total global-mindedness scores (GMS) and each dimension with the outcome variables measuring student achievement. The correlational analysis was limited to those principals who were in current position for 2 or more years at the time of the survey. Both the parametric (Pearson's r) and non-parametric (Spearman's s) were computed, but since there was no substantive change in the significance levels, only Pearson's correlation coefficients are presented in Table 11.

Table 11. *Association between Global-Mindedness and Student Achievement (n=59)*

	ACT Composite	EOC Composite	Graduation Rate
Total GMS	$r=0.09$ $p=0.5198$	$r=0.13$ $p=0.3264$	$r=0.03$ $p=0.8299$
Responsibility	$r=0.07$ $p=0.6223$	$r=0.06$ $p=0.6559$	$r=-0.06$ $p=0.6562$
Cultural Pluralism	$r=0.04$ $p=0.7474$	$r=0.11$ $p=0.3880$	$r=0.01$ $p=0.9421$
Efficacy	$r=0.06$ $p=0.6774$	$r=0.09$ $p=0.4824$	$r=0.13$ $p=0.3314$
Globalcentrism	$r=0.08$ $p=0.5370$	$r=0.10$ $p=0.4714$	$r=0.09$ $p=0.4902$
Interconnectedness	$r=0.13$ $p=0.3403$	$r=0.20$ $p=0.1295$	$r=-0.03$ $p=0.8030$

Among principals who reported being in their current position for at least 2 years, there

were no statistically significant relationships identified between student achievement and the principals' global-mindedness as computed from the GMS. Additional correlations were computed, controlling for the effects of: (1) years in the current principal position, (2) years in a leadership position, and (3) total number of years in education. None of these partial correlation coefficients reached statistical significance.

Research question 3. This research question involved a three-pronged approach based upon factors identified in the literature as potentially important. The three parts were: (a) identification of significant bivariate relationships between the independent variable (GMS) and other factors; (b) identification of significant bivariate relationships between the dependent variables (ACT scores, EOC scores, and graduation rates) and other factors; and (c) development of regression models to assess the association of GMS on outcomes in a multivariable setting. The third part (development of multi-variable regression models) was based on the results obtained in Question 3(a) and Question 3(b). The variables considered for these analyses were:

- School location (LOCALE),
- Percent of students receiving free and reduced price lunch (FRL)
- Student race/ethnicity (ETHNIC)
- School size- as reported by average daily membership (ADM)
- Principal's gender
- Principal's race/ethnicity
- Principal's country of birth
- Principal's travel and time outside of country of birth
- Principal's number of fluent languages spoken

- Principal's years of experience as a principal at current school
- Principal's years of experience as a principal
- Principal's years of experience as an educator

The results of analyses for Question 3(a) are shown in Tables 12 and 13, and the results for Question 3(b) are shown in Tables 14 through 18. The p-values in the Tables 12 through 18 were derived from various statistical tests. Differences in scores by categories (gender, race/ethnicity, birth country, travel outside birth country, etc.) were assessed by parametric t-tests for dichotomous groups (e.g., pooled t-tests or Wilcoxon Signed Rank), and analysis of variance methods were used for categories of more than two groups. Associations between two continuous types of variables were assessed by Pearson's coefficients.

Table 12. *Association of Total Global-Mindedness Scores Among NC High School Principals with School Characteristics*

	Association with GMS	p-value*
School Locale	F=0.34	0.9472
Percent of Students Receiving Free and Reduced Price Lunch	r=-0.14	0.3054
Percent Minority Students	r=0.20	0.1200
School Size- Average Daily Membership	r=-0.21	0.1115

Note. The percentage of minority students was derived from the number of non-White students.

* Statistics and p-values calculated from Analysis of Variance or Pearson's correlations

None of the variables examined in Table 12 demonstrated a relationship with the principal's GMS. However, a negative trend was detected between GMS and school size when non-parametric methods were used ($r=-0.24$, $p=0.06$), indicating principals with a higher GMS tended to be located in smaller schools.

Table 13. *Association of Total Global-Mindedness Scores Among NC High School Principals with Principal Characteristics*

Characteristic	n	Range	Mean (SD)	Median	p-value
Gender					
Men	38	85 – 140	106.6 (13.90)	102.0	0.0009
Women	21	105 – 133	118.5 (9.37)	117.0	
Race/Ethnicity					
White	51	85 – 140	108.9 (13.16)	105.0	0.0029
Non-White	7	110 – 135	125.0 (9.78)	131.0	
Country of Birth					
USA	56	85 – 140	110.9 (13.90)	109.0	0.8506
Other	2	99 – 119	109.0 (14.14)	109.0	
Travel Outside Country of Birth					
No	10	85 – 140	108.2 (17.03)	102.0	0.2738
Yes	38	89 – 135	113.7 (13.07)	115.0	
Time Out of Country of Birth					
None	10	85 – 140	108.2 (17.03)	102.0	0.0403
1 – 30 days	37	87 – 134	108.7 (12.45)	106.0	
>30 days	12	99 – 135	119.7 (11.52)	121.0	
Fluent Languages					
1 language	56	85 – 140	110.1 (13.52)	108.0	0.0718
2 languages	3	115 – 133	124.7 (9.07)	126.0	
Years in Current Position					
2 to 5	47	87 – 140	110.4 (13.40)	107.0	0.6597
>5	12	85 – 135	112.4 (15.16)	115.0	
Years as Principal or Assistant Principal					
2 – 4	8	93 – 135	112.8 (15.33)	111.5	0.8036
5 – 9	17	89 – 140	108.3 (14.74)	104.0	
10 – 14	19	85 – 133	111.9 (14.51)	115.0	
15+	10	94 – 133	112.9 (11.47)	114.5	
Years in Education					
2 – 10	6	93 – 134	111.3 (17.44)	106.0	0.1193
11 – 20	25	85 – 133	107.2 (13.68)	105.0	
21+	25	94 – 140	115.2 (12.19)	115.0	

Note. p-values calculated from Analysis of Variance or pooled t-tests

Statistically significant associations with GMS scores were principal's gender, principal's ethnicity, and time spent out of the country of birth. Higher GMS scores were seen in women, non-White principals, and those who spent more than 30 days traveling outside their country of birth. A few other relationships did not meet the a priori definition of statistical significance, but yielded results that were considered to be trending towards significance. These included being fluent in more than one language and having more years of experience as an educator.

Tables 14 through 18 contain the results of bivariate analyses with each student achievement outcome.

Table 14. *Association of Student Achievement with School Characteristics*

	Association with Composite ACT	Association with Composite EOC	Association with Graduation Rate
School Locale	F=0.77 p=0.6295	F=1.16 p=0.3399	F=0.76 p=0.6374
Percent of Students Receiving Free and Reduced Price Lunch	r=-0.48 p=0.0001	r=-0.40 p=0.0016	r=-0.30 p=0.0250
Percent Minority Students	r=-0.45 p=0.0003	r=-0.44 p=0.0004	r=-0.33 p=0.0132
School Size- Average Daily Membership	r=-0.09 p=0.4742	r=-0.19 p=0.1448	r=-0.36 p=0.0062

Note. Statistics and p-values calculated from Analysis of Variance or Pearson's correlation

The percent of students receiving free and reduced price lunch and the percent of minority students were each negatively associated with the dependent variables: composite ACT scores, composite EOC scores, and graduation rates. As the percentage of students receiving free and reduced price lunch increased, the student achievement measures decreased. Likewise, as the percentage of minority students increased, the student achievement measures decreased. School size was inversely related with graduation rates, meaning that smaller schools

had higher graduation rates. On the other hand, school locale was not related with any of the three outcome measures. Additional analyses were conducted to explore this finding. Due to the limited number of responses in some categories, locale was defined in two ways: (1) codes were combined to categorize the locale into city, suburban, town, or rural settings; and (2) codes further combined to create rural and non-rural categories. Results from these categorizations are shown in Table 15.

Table 15. *Student Achievement by School Locale*

Table 15: Student Achievement by School Locale							
Characteristic	n	ACT Composite Score		EOC Composite Score		Graduation Rate	
		Mean (SD)	p-value	Mean (SD)	p-value	Mean (SD)	p-value
Locale							
City	7	17.6 (1.60)	0.2709	36.9 (14.10)	0.2534	85.8 (5.08)	0.3405
Suburban	3	19.8 (1.47)		55.6 (13.92)		92.4 (5.83)	
Town	4	17.9 (1.47)		39.7 (20.93)		83.8 (8.40)	
Rural	45	17.8 (1.73)		39.2 (13.40)		8.8 (6.32)	
Rural							
No	14	18.2 (1.68)	0.5357	41.7 (16.79)	0.5687	86.7 (6.63)	0.9245
Yes	45	17.8 (1.73)		39.2 (14.25)		86.8 (6.32)	

Note. p-values calculated from Analysis of Variance or pooled t-test

As shown in Table 16, the only relationship with composite ACT scores was principal's race. Students' composite ACT scores were higher in schools with a White principal ($p=0.05$). None of the other factors demonstrated a relationship with student achievement as measured by composite ACT scores.

Table 16. *Association of Student Achievement (ACT) with Principal Characteristics*

Table 10: Association of Student Retention (R2) with Principal Characteristics					
Principal Characteristic	n	ACT Composite Scores			p-value
		Range	Mean (SD)	Median	
Gender					
Men	38	15.6 – 21.5	17.9 (1.26)	18.0	0.9850
Women	21	13.5 – 23.7	17.9 (2.36)	17.5	

Principal Characteristic	n	ACT Composite Scores			p-value
		Range	Mean (SD)	Median	
Race/Ethnicity					
White	51	15.2 – 23.7	18.1 (1.62)	17.9	0.0523
Non-White	7	13.5 – 19.1	16.7 (2.12)	16.0	
Country of Birth					
USA	56	13.5 – 23.7	17.9 (1.74)	18.0	0.4346
Other	2	16.1 – 17.8	17.0 (1.20)	17.0	
Travel Outside Country of Birth					
No	10	13.5 – 21.5	18.0 (1.99)	18.1	0.9520
Yes	38	15.2 – 23.7	17.9 (1.80)	17.9	
Time Out of Country of Birth					
None	10	13.5 – 21.5	18.0 (1.99)	18.1	0.7020
1 – 30 days	37	15.4 – 23.7	18.0 (1.66)	18.0	
>30 days	12	15.2 – 21.0	17.5 (1.73)	17.1	
Fluent Languages					
1 language	56	13.5 – 23.7	17.9 (1.71)	17.9	0.2904
2 languages	3	17.5 – 21.0	18.9 (1.83)	18.3	
Years in Current Position					
2 to 5	47	13.5 – 23.7	17.9 (1.80)	17.8	0.7485
>5	12	15.2 – 19.9	18.1 (1.35)	18.4	
Years as Principal or Assistant Principal					
2 – 4	8	15.4 – 23.7	18.5 (2.36)	18.2	0.7599
5 – 9	17	15.6 – 21.5	18.0 (1.63)	17.3	
10 – 14	19	13.5 – 21.0	17.7 (1.77)	17.8	
15+	10	15.2 – 19.9	17.7 (1.54)	18.4	
Years in Education					
2 – 10	6	15.4 – 23.7	18.4 (2.78)	18.2	0.6014
11 – 20	25	15.6 – 21.0	18.0 (1.51)	17.8	
21+	25	13.5 – 21.5	17.7 (1.69)	17.5	

Note. p-values calculated from Analysis of Variance or pooled t-test

As shown in Table 17, none of the factors considered were found to have a statistically significant or trending association with composite EOC scores.

Table 17. *Association of Student Achievement (EOC) with Principal Characteristics*

Principal Characteristic	n	EOC Composite Scores			p-value
		Range	Mean (SD)	Median	
Gender					
Men	38	0.21 – 0.69	0.39 (0.11)	0.38	0.5806
Women	21	0.13 – 0.81	0.41 (0.19)	0.38	
Race/Ethnicity					
White	51	0.13 – 0.81	0.40 (0.14)	0.38	0.4381
Non-White	7	0.16 – 0.67	0.36 (0.18)	0.33	
Country of Birth					
USA	56	0.13 – 0.81	0.40 (0.14)	0.39	0.2612
Other	2	0.23 – 0.34	0.29 (0.08)	0.29	
Travel Outside Country of Birth	10	0.16 – 0.60	0.40 (0.13)	0.43	0.9914
No	38	0.13 – 0.81	0.40 (0.15)	0.37	
Yes					
Time Out of Country of Birth					
None	10	0.16 – 0.60	0.40 (0.13)	0.43	0.7164
1 – 30 days	37	0.13 – 0.81	0.41 (0.15)	0.38	
>30 days	12	0.16 – 0.60	0.37 (0.12)	0.36	
Fluent Languages					
1 language	56	0.12 – 0.81	0.39 (0.14)	0.38	0.4478
2 languages	3	0.36 – 0.60	0.46 (0.12)	0.41	
Years in Current Position					
2 to 5	47	0.13 – 0.81	0.39 (0.14)	0.37	0.3346
>5	12	0.16 – 0.71	0.43 (0.16)	0.44	
Years as Principal or Assistant Principal					
2 – 4	8	0.28 – 0.81	0.45 (0.16)	0.42	0.4353
5 – 9	17	0.13 – 0.69	0.41 (0.15)	0.40	
10 – 14	19	0.16 – 0.60	0.36 (0.10)	0.35	
15+	10	0.16 – 0.71	0.41 (0.18)	0.38	
Years in Education					
2 – 10	6	0.28 – 0.81	0.45 (0.19)	0.39	0.6699
11 – 20	25	0.13 – 0.69	0.39 (0.13)	0.37	
21+	25	0.16 – 0.71	0.39 (0.14)	0.38	

Note. p-values calculated from Analysis of Variance or pooled t-test

As shown in Table 18, schools in which the principal reported being fluent in more than one language tended to have higher graduation rates ($p=0.10$). None of the other factors emerged as statistically significant.

Table 18. *Association of Student Achievement (graduation rates) with Principal Characteristics*

Principal Characteristic	n	Graduation Rates			p-value
		Range	Mean (SD)	Median	
Gender					
Men	36	0.72 – 0.97	0.87 (0.06)	0.86	0.1875
Women	21	0.76 – 1.00	0.88 (0.07)	0.90	
Race/Ethnicity					
White	50	0.71 – 1.00	0.87 (0.06)	0.86	0.2758
Non-White	6	0.72 – 0.93	0.84 (0.08)	0.84	
Country of Birth					
USA	54	0.71 – 1.00	0.87 (0.06)	0.86	0.9570
Other	2	0.86 – 0.87	0.87 (0.01)	0.87	
Travel Outside Country of Birth					
No	10	0.83 – 0.96	0.87 (0.04)	0.86	0.9986
Yes	36	0.71 – 1.00	0.87 (0.07)	0.87	
Time Out of Country of Birth					
None	10	0.83 – 0.96	0.87 (0.04)	0.86	0.9385
1 – 30 days	36	0.72 – 1.00	0.87 (0.06)	0.86	
>30 days	11	0.71 – 0.97	0.87 (0.09)	0.88	
Fluent Languages					
1 language	54	0.71 – 1.00	0.86 (0.06)	0.86	0.1033
2 languages	3	0.88 – 0.97	0.93 (0.05)	0.93	
Years in Current Position					
2 to 5	46	0.72 – 1.00	0.87 (0.06)	0.86	0.6414
>5	11	0.71 – 0.97	0.86 (0.07)	0.86	
Years as Principal or Assistant Principal					
2 – 4	7	0.84 – 1.00	0.90 (0.06)	0.90	0.1689
5 – 9	16	0.77 – 0.96	0.88 (0.05)	0.87	

Principal Characteristic	n	Graduation Rates			p-value
		Range	Mean (SD)	Median	
10 – 14	19	0.72 – 0.97	0.86 (0.06)	0.86	0.5369
15+	10	0.71 – 0.94	0.83 (0.08)	0.85	
Years in Education					
2 – 10	6	0.84 – 1.00	0.89 (0.06)	0.88	
11 – 20	24	0.72 – 0.97	0.87 (0.05)	0.86	
21+	25	0.71 – 0.97	0.86 (0.07)	0.86	

Note. p-value from t-test or Analysis of variance

Table 19 depicts the results of the series of bivariate analyses (identified in Question 3(a) and Question 3(b) and shown in Tables 12-18) for all principals who responded to all 30 questions in the GMS survey (n=89). Statistically significant findings, defined as $p < 0.05$, are shown along with associations that did not meet the strict a priori definition of statistically significant, but that nonetheless may be suggestive of a trend. These trending relationships were defined as those in which the p-value was found to be 0.10 or less, but greater than 0.05.

Table 19. *Summary of Statistically Significant and Trending Univariate and Bivariate Analyses*

Table 1: Summary of Statistically Significant and Trending Correlations and Effect Size Analyses				
	GMS (Independent Variable)	Student Achievement (Dependent Variables)		
		ACT Composite	EOC Composite	Graduation Rate
<u>Student Achievement</u>				
ACT				
EOC				
Graduation Rate				
<u>School Characteristics</u>				
Locale				
% Free/Reduced Lunch		Negative Association	Negative Association	Negative Association
% Minority		Negative Association	Negative Association	Negative Association
Size (ADM)	(*trend)		(*trend)	Negative Association

	GMS (Independent Variable)	Student Achievement (Dependent Variables)		
		ACT Composite	EOC Composite	Graduation Rate
<u>Principal Characteristics</u>				
Gender	Higher score in women	*trend		
Race/Ethnicity	Higher score in non-White			
Country of Birth				
International Travel				
Length of International Travel	Higher score if travel > 30 days			
Languages	*trend			*trend
Years in Current Position				
Years in Leadership				
Years in Education	(*trend)			

Note. *Trend defined as $0.05 \leq p < 0.10$. Parentheses denote findings based on non-parametric methods.

A correlational analysis was also constructed based on the results from this group of principals with two or more years and shown in Table 20.

Table 20. *Bivariate Correlations with Potential Regression Variables*

	X1	Y1	Y2	Y3	X2	X3	X4	X5	X6	X7	X8	X9
GMS (x1)	1.000											
ACT Composite (y1)	0.085	1.000										
EOC Composite (y2)	0.130	0.851 **	1.000									
Graduation Rate (y3)	0.029	0.496 **	0.578 **	1.000								
% Free/Reduced Lunch (x2)	- 0.136	- 0.475 **	- 0.401 **	- 0.300 **	1.000							
% Minority (x3)	0.205	- 0.454 **	- 0.443 **	- 0.326 **	0.382 **	1.000						

	X1	Y1	Y2	Y3	X2	X3	X4	X5	X6	X7	X8	X9
School size (ADM) (x4)	- 0.209	- 0.095	- 0.192 *	- 0.358 **	- 0.023	0.236 *	1.000					
Male Principal (x5)	- 0.421 **	0.003	- 0.086	- 0.177 *	0.059	- 0.105	0.110	1.000				
White Principal (x6)	- 0.384 **	0.256 *	0.104	0.148	- 0.059	- 0.295 **	- 0.002	0.161	1.000			
Travel (days) (x7)	0.099	- 0.018	- 0.053	0.005	0.043	0.082	0.106	0.068	0.055	1.000		
Fluent Languages (x8)	0.236 *	0.140	0.101	0.218 *	- 0.133	- 0.043	- 0.138	- 0.150	0.087	- 0.029	1.000	
Leadership years (x9)	0.024	- 0.071	- 0.087	- 0.302 **	- 0.004	0.048	0.311 **	- 0.093	- 0.023	0.057	- 0.008	1.000

*p<0.10, **p < 0.05

Findings from the correlations (Table 20) generally confirmed those findings presented in Tables 12-18 with two exceptions. When length of international travel was considered in a continuous fashion (as opposed to categorical groupings in Tables 12-18), there was not a statistically significant correlation with GMS ($r=0.099$, $p=0.4549$). When the number of years in educational leadership was considered as a continuous variable, there was a significant negative association with graduation rate ($r=-0.302$, $p=0.0267$).

Of particular note, only three variables emerged as potential confounders as identified in either Table 19 or Table 20. Racial status of the principal was significantly associated with total GMS and was also identified as a trending association with ACT composite scores. School size trended towards an association with GMS and two of the dependent variables, EOC composite scores, and graduation rates. The principal's ability to speak more than one language trended towards an association with both GMS and graduation rates. Interaction terms were created for

these potential confounders and effect modifiers and were included in the models for each outcome measure.

As planned, a number of regression analyses were employed to explore the relationship of GMS with each of the three outcomes. In each case, simultaneous regression models were developed using the results in the bivariate analyses to inform the model as summarized in Tables 19 and Table 20. Effect modification was assessed with the inclusion of interaction terms for principal's minority status with GMS (White x GMS), for fluency in more than one language with GMS (Language x GMS), and for school size with GMS (School Size x GMS).

Four regression models were employed for each of the student outcome measures where all variables were entered into the model simultaneously. The first simultaneous model consisted only of variables related to principal characteristics along with the primary independent variable, GMS. The second model consisted only of variables related to school characteristics. The third model consisted of both principal and school characteristics from the first 2 models. The fourth model added a term for school locale even though it was not identified as related to GMS or student achievement, but was nevertheless considered by the researcher as being potentially important. With the exception of school locale, all variables included in these four simultaneous regression models were identified from the bivariate analyses. If any one of the variables was associated with a p-value of 0.10 or less, with the primary independent variables, GMS, or any one of the three dependent variables, it was included in the model.

Lastly, as planned, two step-wise regression models were employed. The criteria for entry and criteria for remaining in the model were set at $p < 0.10$. Following the first step-wise regression model, an additional model was run in which GMS scores were included in addition

to the variables selected from the stepwise approach. This method, in which the models were nested, allowed for the calculation of the difference in the R^2 values from the two models to estimate the uniqueness attributable to GMS.

Regressions results for ACT composite scores. Table 21 contains the results of standardized coefficients from the 6 regression models for the variables entered in each model. When principal characteristics were entered into the model, global-mindedness (GMS) along with the principal's race and the interaction of race and GMS were determined to be the most important predictors of student ACT scores. When school characteristics were entered into the second model, the percentage of students receiving free and reduced price lunches and the percentage of minority were statistically significant. In the third model, which incorporated all terms in the first two models, principal's global-mindedness dropped out of the list of statistically significant predictors. The fourth model incorporated an additional term for school locale, and it trended towards a negative association with the outcome, indicating a lower ACT score for students in rural schools when all other co-variables were considered.

Table 21. *Regression Results for ACT Composite Scores Presented as Standardized Coefficients*

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Principal Characteristics						
Male Gender	0.053		-0.031	0.015		
White Race	-4.851***		-3.596**	-3.157*		
Travel Days	-0.046		-0.000	-0.051		
Fluency in 2+ Languages	-1.855		0.190	0.078		
Years in Education	0.104		-0.144	-0.099		
Years in Leadership	-0.305		-0.099	-0.140		
GMS	-1.477**		-0.889	-0.839		0.114
White Race x GMS	4.785***		3.516**	3.125*		
Language x GMS	1.896		-0.176	-0.088		

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<u>School Characteristics</u>						
Percent Free/Reduced lunch		-0.357***	-0.305**	-0.352**	-0.357***	-0.325**
Percent Minority		-0.319**	-0.207	-0.242	0.321***	-0.353***
School Size (ADM)		-0.030	1.191	0.635		
School Size x GMS			-1.178	-0.700		
Rural Locale				-0.236*		
Adjusted R ²	0.1180	0.2758	0.2698	0.3023	0.2934	0.2872
F	1.80*	8.36***	2.54***	2.67***	12.84***	8.79***

*=p<.10; **=p<.05; ***=p<.01

In order to understand the interaction term of principal race with GMS scores in predicting student ACT scores, stratified analyses were performed. Among non-White principals, GMS was negatively associated with student ACT scores ($r=-0.572$, $p=0.1796$), although it was not statistically significant. Among White principals, GMS was positively associated with ACT scores ($r=0.2959$, $p=0.0327$). The full regression model (Model 4) was again considered using data only from White principals, as the number of non-White principals was too small to permit a multiple regression model. Among this subset of White principals, the strongest predictors of ACT scores were the percentage of students receiving free and reduced price lunches and being in a rural school setting.

Table 22. *Regression Results for ACT Composite Scores Restricted to White Principals (n=51)*

Variables	Standardized Regression Coefficients
<u>Principal Characteristics</u>	
Male Gender	0.000
Travel Days	-0.069
Fluency in 2+ Languages	0.125
Years in Education	-1.329
Years in Leadership	-0.152
GMS	0.320
Language x GMS	-0.129
<u>School Characteristics</u>	
Percent Free/Reduced Lunch	-0.318*

Variables	Standardized Regression Coefficients
Percent Minority	-0.213
School Size (ADM)	0.398
School Size x GMS	-0.411
Rural Locale	-0.239*
Adjusted R ²	0.1449
F	1.68

The last two models used a step-wise approach to identify significant predictors of student success defined by ACT scores. The significant predictors using this approach were the percentage of minority students, followed by the percent of students receiving free and reduced price lunch. GMS explained less than 1 percent of the variance of ACT scores. An additional regression analysis was performed in which the interaction term for principal's race with GMS along with the main effects of GMS and principal's race were included in the model. The standardized coefficients for the three terms included in this model (GMS -0.601, White racial status -2.216, and White x GMS 2.277) did not reach statistical significance when added to the variables in Model 6.

In summary, the principals' global-mindedness as measured by the GMS instrument failed to show a statistically significant relationship with student ACT scores in the presence of other characteristics included in the multivariable models. However, the positive correlation between GMS and ACT composite scores was statistically significant among principals reporting their racial/ethnic status as White.

Regressions results for EOC composite scores. Regression models were constructed for student success based on EOC composite scores in a similar manner to those for ACT scores. Table 23 contains the standardized beta coefficients resulting from each of the 4 simultaneous regression models and the 2 step-wise regression models.

Table 23. *Regression Results for EOC Composite Scores Presented as Standardized coefficients*

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<u>Principal Characteristics</u>						
Male Gender	-0.044		-0.107	-0.058		
White Race	-4.976***		-3.164*	-2.694		
Travel Days	-0.051		-0.000	-0.054		
Fluency in 2+ Languages	-2.363		-1.094	-1.213		
Years in Education	0.237		0.022	0.070		
Years in Leadership	-0.418*		-0.194	-0.238		
GMS	-1.513**		-0.783	-0.729		0.172
White Race x GMS	4.733***		2.940*	2.521		
Language x GMS	2.370		1.082	1.176		
<u>School Characteristics</u>						
% Free/Reduced Lunch		-0.289**	-0.165	-0.216	-0.272**	-0.227*
% Minority		-0.303**	-0.316*	-0.353**	-0.339***	-0.393***
School Size		-0.127	0.642	0.045		
School Size x GMS			-0.710	-0.197		
Rural Locale				-0.253*		
Adjusted R ²	0.0808	0.2350	0.1926	0.2308	0.2330	0.2499
F	1.53	6.94***	1.99**	2.16**	9.81***	7.44***

*=p<.10; **=p<.05; ***=p<.01

Analyses predicting student EOC composite scores restricted to principal characteristics yielded statistically significant coefficients for the principal's race, GMS scores and their interaction, whereas analyses restricted to school characteristics yielded statistically significant findings for the percentage of students receiving free and reduced price lunches and the percent of minority students. Further exploration of the interaction between race and GMS revealed a negative correlation between GMS and EOC composite scores that was non-statistically significant in non-White principals ($r=-0.486$, $p=0.2689$), but positive and marginally significant correlation in White principals ($r=0.266$, $p=0.0597$). The full regression model (Model 4) was

again considered using data only from White principals, as the number of non-White principals was too small to permit a multiple regression model. Among White principals (n=51), none of the principal characteristics and none of the school characteristics emerged as statistically significant in the presence of all other covariates.

Table 24. *Regression Results for EOC Composite Scores restricted to White Principals (n=51)*

Variables	Standardized Regression Coefficients
Principal Characteristics	
Male Gender	-0.021
Travel Days	-0.042
Fluency in 2+ Languages	-1.204
Years in Education	0.094
Years in Leadership	-0.282
GMS	0.268
Language x GMS	1.163
School Characteristics	
Percent Free/Reduced Lunch	-0.248
Percent Minority	-0.270
School Size (ADM)	0.345
School Size x GMS	-0.474
Rural Locale	-0.197
Adjusted R ²	0.1349
F	1.62

Regression models using both principal and school characteristics (Model 4) resulted in statistically significant negative associations for the percent of students classified as minorities and location in a rural school setting. No other variables emerged as statistically significant or trending.

Stepwise regression models resulted in identification of two important predictors of EOC: the percent of minority students and the percent receiving free and reduced price lunch. When GMS was included into the model, the resulting R² was only slightly increased (from

0.2595 to 0.2887), showing GMS contributed less than 3% (0.0292) to the variability of EOC scores.

In summary, the principal's global-mindedness scores were positively associated with student outcomes as measured by the EOC composite scores when other variables were not taken into consideration. In multivariable models, the association did not hold.

Regressions results for graduations rates. Lastly, regression models were constructed for student success defined by graduation rate, and the results are shown in Table 25 for each of the six regression models employed.

Table 25. *Regression Results for Graduation Rates Presented as Standardized Coefficients*

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Principal Characteristics						
Male Gender	-0.233		-0.241	-0.187		
White Race	-3.432*		-1.585	-0.961		
Travel Days	0.081		0.135	0.088		
Fluency in 2+ Languages	-2.398		-1.264	-1.342		
Years in Education	0.395		0.267	0.327		
Leadership Years	-0.712***		-0.564**	-0.617**	-0.244*	-0.247*
GMS	-1.298**		-0.498	-0.361		-0.027
White Race x GMS	3.292*		1.44	0.859		
Language x GMS	2.562		1.397	1.447		
School Characteristics						
% Free/Reduced Lunch		-0.286**	-0.147	-0.213	-0.325***	-0.324**
% Minority		-0.115	-0.162	-0.192		
School Size		-0.363***	0.719	0.210	-0.310**	-0.305**
School Size x GMS			-0.895	-0.468		
Rural Locale				-0.237		
Adjusted R ²	0.1857	0.2101	0.2094	0.2397	0.2311	0.2178
F	2.32**	5.97***	2.06**	2.17**	6.36***	4.69***

*=p<.10; **=p<.05; ***=p<.01

In the first model of principal characteristics, there was a statistically significant association with graduation rates for the principal's racial/ethnic status, the number of years in school leadership, GMS, and the interaction of racial/ethnic status with GMS. Stratified correlations of GMS with graduation rate were negative for non-White principals ($r=-.36$), but positive in White principals ($r=0.13$), although neither was statistically significant (both $p>0.10$). In the second model of school characteristics, the two statistically significant predictors identified were the percent of students receiving free and reduced price lunches and school size as measured by the average daily membership (ADM). When all variables were included in the model (Model 3), only the number of years the principal reported having spent in educational leadership remained statistically significant. No other variables were statistically significant or trending towards statistical significance. Adding school locale to the covariates (Model 4) did not alter the results from the previous model in a significant fashion.

Important predictors of graduation rates from the step-wise regression identified school size (i.e. Average Daily Membership), the percent receiving free and reduced price lunch, and the principal's number of years in a leadership position as important contributors to the model. These three predictors accounted for approximately 23% of the variance (adjusted $R^2=0.2311$) in graduation rates. Adding the principal's GMS to the model (Model 6) did not improve the model fit.

In summary, consistent findings from all models indicated the number of years the principal had spent in educational leadership was negatively associated with graduation rates. When considering the effect of various other principal and school characteristics, the principal's global-mindedness as measured by the GMS did not appear to be an important contributor to student achievement as measured by graduation rates.

Summary

Question 1. What is the level of global-mindedness among NC public high school principals? A total of 89 principals completed the GMS questionnaire. The scores were normally distributed with an average score of 110.5 and a standard deviation of 12.7. The interquartile range of scores was 101 to 118.

The qualitative analysis yielded five themes that directly related to the *Future-Ready Students: Goals for the 21st Century* document. The five themes were: (1) Student Preparation, (2) Teacher Preparation, (3) Supportive Learning Environments, (4) Collaboration with Other Stakeholders, and (5) Resources. Combined frequency totals for the two qualitative questions were given to each principal, resulting in a score between 0-10. There was a significant correlation between GMS scores and Global Awareness scores.

Question 2. Is the principal's level of global-mindedness, including the total score and each dimension, associated with student achievement in NC public high schools? A series of analyses examined the bivariate relationship between each outcome measurement (ACT composite score, EOC composite score, and graduation rate) with the total GMS score and each of the 5 dimensions. Correlation coefficients were used to assess the strength of the relationships for these independent and dependent variables.

Table 26. *Hypotheses Testing*

Null Hypothesis	Description	Statistical Analysis	Rejected/ Failed to Reject
Ho1	There is no association between total global-mindedness and the school's average ACT composite score.	Correlation	Failed to Reject
Ho2	There is no association between the dimension of responsibility in a principal's global-mindedness and the	Correlation	Failed to Reject

Null Hypothesis	Description	Statistical Analysis	Rejected/ Failed to Reject
Ho3	school's average ACT composite score. There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average ACT composite score.	Correlation	Failed to Reject
Ho4	There is no association between the dimension of efficacy in a principal's global-mindedness and the school's average ACT composite score.	Correlation	Failed to Reject
Ho5	There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's average ACT composite score.	Correlation	Failed to Reject
Ho6	There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's average ACT composite score.	Correlation	Failed to Reject
Ho7	There is no association between total global-mindedness and the school's average EOC composite score.	Correlation	Failed to Reject
Ho8	There is no association between the dimension of responsibility in a principal's global-mindedness and the school's average EOC composite score.	Correlation	Failed to Reject
Ho9	There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's average EOC composite score.	Correlation	Failed to Reject
Ho10	There is no association between the dimension of efficacy in a principal's global-mindedness and the school's average EOC composite score.	Correlation	Failed to Reject
Ho11	There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's average EOC composite score.	Correlation	Failed to Reject
Ho12	There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's average EOC composite score.	Correlation	Failed to Reject
Ho13	There is no association between total global-mindedness and the school's graduation rate.	Correlation	Failed to Reject

Null Hypothesis	Description	Statistical Analysis	Rejected/ Failed to Reject
Ho14	There is no association between the dimension of responsibility in a principal's global-mindedness and the school's graduation rate.	Correlation	Failed to Reject
Ho15	There is no association between the dimension of cultural pluralism in a principal's global-mindedness and the school's graduation rate.	Correlation	Failed to Reject
Ho16	There is no association between the dimension of efficacy in a principal's global-mindedness and the school's graduation rate.	Correlation	Failed to Reject
Ho17	There is no association between the dimension of globalcentrism in a principal's global-mindedness and the school's graduation rate.	Correlation	Failed to Reject
Ho18	There is no association between the dimension of interconnectedness in a principal's global-mindedness and the school's graduation rate.	Correlation	Failed to Reject

Question 3. Do other factors influence the association, or lack of association, between global-mindedness and student achievement? Table 27 contains the covariates identified through a series of statistical analyses as being associated with the primary independent variable of this research, global-mindedness, as well as those associated with each of the three outcome measures of student achievement – ACT composite scores, EOC composite scores and graduation rates.

Table 27. *Summary of Bivariate Associations with Independent and Dependent Variables*

	GMS (Independent Variable)	Student Achievement (Dependent Variables)		
		ACT Composite	EOC Composite	Graduation Rate
Statistically Significant Associations ($p < 0.05$)	Principal's Gender	Percentage of students receiving free/reduced lunch	Percentage of students receiving free/reduced lunch	Percentage of students receiving free/reduced lunch
	Principals' Race/Ethnicity			
	Principals' travel	Percentage of minority students	Percentage of minority students	Percentage of minority students
				School Size (ADM)
				Principal's years in educational leadership
Trend ($p < 0.10$)	School Size (ADM)	Principal's Race/Ethnicity	School Size (ADM)	Principal's number of fluent languages
	Principal's number of fluent languages			
	Principal's years in education			

Each of these measures was considered in subsequent multivariable models, and the results are summarized in Table 28. The most significant predictors of student success were schools with a lower percentage of students receiving free and reduced price lunch, schools with

a lower percentage of students classified as minority, smaller schools, and those where the principal had fewer years experience in educational leadership.

Table 28. *Regression Summary: Significant Predictors of Student Achievement*

Measures of Student Achievement	Significant Covariates Identified through Simultaneous Regression Analysis including all covariates (Model 4)	Significant Covariates Identified through Stepwise Regression (Model 5)
ACT Composite	Percent students with Free/Reduced Lunch	Percent students with Free/Reduced Lunch
EOC Composite	Percent minority students	Percent minority students Percent students with Free/Reduced Lunch
Graduation Rate	Principal's Years in Leadership	Percent minority students Percent students with Free/Reduced Lunch School size

Note. Significant defined as $p < 0.05$

Chapter Five: Discussions and Recommendations

This chapter begins with a brief overview of this research study centered on the relationship between the global-mindedness of high school principals and student achievement in North Carolina. This study is purposefully contextualized in a world experiencing the impact of the complex, diverse and interconnected processes of globalization, which in turn may contribute to increasing inequalities across the educational spectrum. As a response, this research is framed around the imperative of ensuring educational leaders are able to develop a critical, global perspective of education. In this chapter, the discussion of findings is considered in light of the study's limitations. In addition, practical implications and contributions to research are discussed. This chapter concludes with recommendations for future research and a final summary of this study.

Overview of Study

Chapter One identified the problem from which this study grew; explaining that today's society is more global and more interdependent than ever before and growing at a rapid pace. The world that today's students will inherit will be vastly different from what previous generations have known. This research focused on high school leaders in order to examine a vantage point not found in current global education literature. While previous literature has considered the role of education, it has focused on students at both the K-12 level and the university level, to ascertain the degree of student global-mindedness. Other studies have focused on teachers and their global-mindedness in university programs. Given the paucity of

research related to global-mindedness in educational leaders, this study was undertaken in order to add this vital link in the literature on global education. Specifically, the focus was on the high school principal as the educational leader within his/her community, to learn if his/her global-mindedness translated into a greater student achievement outcomes.

Chapter Two explored the notion that principals are the cultural leaders and “teachers” within and beyond the school setting. Their attitudes, values and beliefs help to shape the school environment and form school culture, which in turn, has a profound effect on student learning and outcomes (Coles & Southworth, 2005; Sergiovanni, 2001). Therefore, an understanding of the dimensions of global-mindedness, as well as an identification of the tools and strategies needed to promote global-mindedness, is relevant within the context of preparing students to be successful in a global environment.

Chapter Three explained the basis for this study and the methods used, which was based on the work of Hett (1993), who proposed global-mindedness as “worldview in which one sees oneself as interconnected to the world community and feels a sense of responsibility for its members which is reflected in attitudes, beliefs, and behaviors” (p.143). In defining the concept, Hett identified five dimensions of global-mindedness: cultural pluralism, efficacy, globalcentrism, interconnectedness and responsibility. These five dimensions provide the foundation for the 30-item Global-Mindedness Scale (GMS) developed to quantify the concept.

Chapter Four presented the results of this study, which were obtained from public high schools in the state of North Carolina. This state’s rapid globalization made it a good setting for the research. Research participants were high school principals in public school settings. Information was gained from self-reporting surveys, which included questions regarding their backgrounds and their school’s programing, and incorporated Hett’s instrument to measure their

global-mindedness. This study sought answers to three research questions:

- Q1: What is the level of global-mindedness among NC public high school principals?
 - a. How do principals view their roles in promoting global-mindedness?
 - b. What have principals done to support global-mindedness?
 - c. How do the principals' viewpoint and actions relate to their level of global-mindedness?
- Q2: Is the principal's level of global-mindedness, including the total score and each dimension, associated with student achievement in NC public high schools?
- Q3: Do other factors influence the association, or lack of association, between global-mindedness and student achievement?

Conceptual Framework

The research study addressed skills identified as essential to school leaders in the 21st century, as identified by Partnership for 21st Century Skills (2011) and adopted by North Carolina as evidenced in several state documents (see Figure 1 in Chapter One). The Partnership for 21st Century Skills defines necessary student outcomes as the “knowledge, skills and expertise students should master to succeed in work and life in the 21st century” (p. 2). Students in 21st century schools are expected to learn in new ways by using inquiry and a problem solving approach to learning in all subject areas. Inquiry learning is specifically organized to develop 21st century life and career skills such as teamwork, leadership, initiative, and the development of curiosity (Wagner, 2008). Additionally, as defined by the Partnership for 21st Century Skills (2011), there is a need to develop global perspectives and skills that prepare analytical citizens. Schools need principals who have the ability and skills to lead schools in ways that meet the needs of the 21st century.

Hett (1993) asserted that people who are globally-minded believe they can individually have an impact on the world, and that each individual has something to offer. They have a strong sense of appreciation of diversity and differences, and an awareness and appreciation for the interconnectedness of the world. This study used Hett's research in combination with the Partnership for 21st Century Skills and North Carolina state documents as the framework to explore the relationship between global-mindedness levels in North Carolina public high school principals and student achievement.

Review of Methods

The survey was sent to 467 principals from whom 101 responses were received (22%). Although the response rate was low, responders generally were representative of all high school principals in the state. The analysis of quantitative data was performed using SAS®. The statistical procedures used included descriptive statistics, correlational analyses, comparative methods, and multiple regression models. Some questions were qualitative in nature and demanded the researcher's analytic thoughts using Downe-Wamboldt's content analysis approach and Saldana's coding methods. Results from both quantitative and qualitative data were viewed using Creswell and Plano Clark's Convergence Model to create a more holistic approach to the study.

Discussion of Research Findings

The discussion of the findings is ordered as the data were presented in Chapter Four, with the discussion of the sub-question findings following the discussion of the main question, and relating all discussion to the previous literature review found in Chapter Two.

Findings and discussion of question 1. What is the level of global-mindedness among NC public high school principals? The data gathered and analyzed for this question

were studied to gain a better understanding of the relationship of the demographic profile of the principal to his/her global-mindedness level. Furthermore, sub-questions looked at the beliefs, attitudes and behaviors of the principal to determine how they related to actions within the school.

The findings from this study indicated that female high school principals in the state of North Carolina were more globally-minded than their male counterparts, and that racially, non-White principals were more globally-minded than White principals. Additionally, those who had spent 30 days or more out of their country of birth scored higher on the GMS than those with less international travel experience. Each of these characteristics is explored further below in relation to previously discussed literature.

Gender. In analyzing the various backgrounds of these principals, the strongest relationship to global-mindedness was that of gender. This finding is consistent with other studies that found females possessed higher global-mindedness levels than their male counterparts (Gillian, 1995; Hett, 1993; Kirkwood-Tucker, et al., 2011; Smith, 2008; Zhai & Scheer, 2004). In the original research conducted by Hett (1993), it was hypothesized that women would score higher on the GMS than men. Hett suggested that women displayed higher levels of empathy to Third World conditions and greater opposition to war than their male counterparts. She found an overall mean score for men of 113.32 versus 120.37 for women (significant at the .001 level). Scores of North Carolina principals were somewhat lower than those reported in Hett's findings for both genders, but the direction and gender gap were consistent with her findings.

From this finding, it may be inferred that in aggregate, females who participated in the survey demonstrate greater understanding of the importance of individual action and

involvement in national and international issues. This finding suggests that school leaders, across gender, may further the development of global-mindedness by enhancing understandings of gender differences and feminist perspectives related to taking action and involvement in national and global issues (Collard & Reynolds, 2005; Larson & Murtadha, 2002). In doing so, school leaders may be able to promote understanding of the propensity to consider action within both a global context and local context. One example of this kind of work would entail educators examining what sociologists commonly refer to as the hidden curriculum (Loutzenheiser & MacIntosh, 2004). It is argued that within the curriculum, various subjects are designed for specific gender groups (e.g. woodshop for boys, child care for girls). Loutzenheiser and MacIntosh (2004) believe that this type of behavior perpetuates the patriarchal society and thus furthers the gap between genders.

Race. The current findings showed that non-White high school principals were more globally-minded than Whites. This contradicts Hett's (1993) findings among college students that found no statistical significant difference among various racial groups. All other studies that employed the GMS, which also included race/ethnicity as a variable, found no statistical differences related to race.

It would seem reasonable to speculate that the small sample size of non-White principals in this study (n=7) may have contributed to the findings. Given a larger sample size, the results may not hold.

Travel experience. The data for this study reported that the amount of time a principal spent abroad or in other countries was related to higher scores on the GMS. A discrepancy in the data related to experiences abroad was found between the variables country of birth and length of time spent outside country of birth. That is, where a person was from originally was

not significant, but how long a person had lived outside their country of birth was statistically significant.

Hett's study showed significant differences in global-mindedness scores for students with different amounts of international travel/study experience. In other words, the longer the experience, the higher the scores. Although Kehl and Morris (2005) and Kirkwood-Tucker et al. (2011) support the importance of longer periods abroad when developing the dimensions of global-mindedness, some contradictions do exist in previous research (Duckworth et al., 2005; Smith, 2008). Duckworth et al. (2005) studied GMS in ninety pre- and in-service teachers. The researchers did not find associations between GMS and demographic variables, which included: gender, race, language fluency, and time spent out of country of birth. A possible explanation for the dissimilar results might be the effect of Duckworth et al. (2005) restricting the analysis to quantitative methods. By only utilizing quantitative methods, the researchers were limited in the data collected and the interpretation of those data. Smith (2008) studied North Carolina extension agents and levels of global-mindedness. The study's sample was homogenous in terms of travel experience, with most reporting they have not traveled outside of their country of birth. Due to a small sample, results from Smith's study may not be applicable to this study.

Since a longer time outside of a person's country of birth may allow for more opportunities to interact with people from other cultures and include time for a better understanding of the local language and other cultural contexts, additional support for this finding may exist. According to Warrell (2013), as people move away from their comfort zones to explore new cultures and become involved in new relationships, they are more likely to enter situations involving people of different cultures in the future. In thinking about the many implications of this finding, perhaps encouraging principals to participate in travel abroad, study

abroad, or participate in leadership exchanges would be beneficial to their professional development and leadership skills.

Although length of time spent outside one's country of birth is often a matter of circumstance or privilege, there is significant knowledge to be gained regarding the importance of travel abroad in the development of global-mindedness. Therefore, future studies should solicit additional qualitative data that provides detailed, descriptive responses identifying the length and types of the types of cultural or personal experiences abroad as well as the knowledge gained as compared to less extensive travel experiences or time spent abroad.

Question 1(a). How do principals view their roles in promoting global-mindedness?

Research questions were developed to understand how North Carolina high school principals conceptualize and understand global awareness and student learning in the 21st century. Of equal importance was how this group of school leaders chose to act upon their understanding. The findings that emerged related to the principal's global awareness were grouped into five themes, as discussed below.

Student preparation. Over a third of principals gave answers related to preparing students for a global world (i.e. 21st century learning). Many of these answers include developing curriculum that aligns with a vision for global learning. Basic literacy, numeracy, and scientific reasoning are fundamental to a 21st century education (Asia Society, 2013; Partnership for 21st Century Skills, 2011). From a structural perspective, the Partnership for 21st Century Skills framework (2011) rests on a foundation of core academic learning. Learning skills, life and career skills, and information, media, and technology skills are not meant to be taught in isolation, but to be applied across the content areas. The literature indicates that

students need a well-defined curriculum to prepare them for the future knowledge-based economy.

According to Friedman (2007), teaching high-level critical thought requires the capacity to develop a deep understanding of the unknown. The student is actively producing and constructing knowledge, making decisions about modes of communications and processes of interpretation. To create the conditions where this type of learning can thrive requires a curriculum that is both open-ended and aligned with a forward thinking vision— a vision set forth by the school principal.

When proposing solutions about how schools can and must change, the literature is focused on what students and teachers need to do differently (Partnership for 21st Century Skills, 2011; Wagner, 2008). For example, students need to learn new skills. They need to be critical thinkers in analyzing large amounts of information available through technology tools (Wagner, 2008). Students need to learn new ways to effectively communicate and collaborate in a networked world, and they need to become skilled problem solvers rather than those who memorize information and regurgitate facts (Darling-Hammond et al., 2008).

The data relating to this theme supports the idea that principals in the 21st century see their role as being directly tied to helping students succeed. Many answered with ways in which they develop (or need to develop) authentic activities that connect learning to what students do or will be doing outside the classroom (i.e. real-world application). In some way, more than one-third of principals (39%) shared that they believe teaching today must be closely aligned with activity in the real-world, particularly where work and careers are concerned.

Teacher preparation. The most frequent theme mentioned by principals (58%) was the school's focus on adult learning. Many principals saw their role as thinking outside of the

proverbial box to offer various professional development opportunities for teachers (e.g. exchange programs, off-site training). It can be surmised from this data that principals value professional development and see the direct benefits it can provide to teachers, and thus to students.

Students are taught to be lifelong learners so that they have the capacity to adapt to the unknown realities of the future (Friedman, 2007). As a result, the culture of the school is student-centered. Questioning and collaborating are common in all school activities. Adult learning similarly influences the school culture. This theme is related to the responsibility that teachers hold for developing and delivering the curriculum.

The Asia Society's framework (2013) recommends that teachers model behavior for students by developing their own interdisciplinary and cultural competence. Instruction of global content requires skilled teachers who have deep international knowledge. From a symbolic perspective, the adults are engaged in a continuous cycle of learning, which in turn, models the expectation for student learning.

Supportive learning environments. The third theme obtained from the data revealed that 33% of principals saw their role in promoting global awareness by means of the school culture. Principals considered it to be their role as the school's model when related to student, teacher, and community behaviors, beliefs, and attitudes. From a symbolic perspective, sharing cultures through ceremonies and rituals represents the global vision of the school. Four of the principals described being a model of 21st century learning in two ways: (1) immersing themselves in the real world and using those experiences to motivate their students and teachers; and (2) engaging in professional reading about teaching and learning in the 21st century.

However, a majority of the respondents identified gaps between their beliefs about

global awareness and the actual teaching practices in their schools. According to principals, these gaps exist because of the existence of certain barriers. These barriers typically take the form of district and state mandates that adversely influence funding and basic operations. According to the data collected in this study, the focus is therefore on ensuring mandates are being implemented and not on implementing a global-awareness focus. However, it is unclear from the data what the principals are doing through leadership to overcome the barriers and make their espoused concepts of teaching from a global perspective a reality in the classroom.

Collaboration with other stakeholders. Collaboration is an essential element of any 21st century school, but only 12% of the responding principals reported this idea as part of their role in promoting global awareness. From a symbolic perspective, the professional culture of the staff models the collaboration skills that students will need to work successfully in the 21st century.

In the context of updating pedagogical models, teachers must learn how technology assists in developing new ways of teaching and learning, and they must learn to collaborate with their peers (International Society for Technology in Education, 2015). The data collected in this study relating to this theme supports the idea that professional collaboration among colleagues is important in developing 21st teaching beliefs and values. While individual teacher learning is important, learning socially with professional colleagues is equally important. Typically, the kind of learning teachers engage in is both face-to-face and, less often, virtual. In the 21st century, changing and improving teaching practice is no longer an isolated endeavor. Teachers learn best through collaboration with other teachers. Professional collaboration provides the intellectual stimulation to help understand changes in pedagogy and practice. Lemke and Martin (2004) observed that the most effective professional development for educators is job

embedded, student focused, collegial, continuous, and metacognitive. Professional development needs to be presented to teachers across a continuum and anchored in the context of 21st century teaching and learning. This is to say that teachers cannot just learn technology skills in isolation of teaching; it has to be relevant to their practice.

Data from this study also demonstrate that principals value professional collaboration as an extension of teacher learning and ultimately student preparation. The respondents shared the belief that collaboration with peers is important for teachers to acquire new ideas about 21st century teaching and learning—ways in which they provide opportunities for teachers to learn from each other.

As with other concepts of 21st century teaching, collaboration with other stakeholders as envisioned by the principals is more the exception than the norm. The theme of collaboration is important to this study because the principals acknowledged the importance of professional development in an effort to change and redesign 21st century learning.

Resources. Since 21st century learning is defined as being active, constructive, intentional, authentic, and cooperative (Jonassen, Howland, Marra, & Crismond, 2008), it often results in principals thinking about resources necessary to provide such opportunities. In other words, schools need certain resources (e.g. technological, professional) in order to sustain 21st century learning.

Communication and collaboration are skills developed through face-to-face as well as through virtual interactions (Partnership for 21st Century Skills, 2011; Wagner, 2008). In the 21st century, the potential for collaboration is expanded beyond face-to-face interaction as a result of technology, including methods such as sharing multi-media documents, social networking, and web conferencing. Traditional collaboration and communication skills of

speaking, listening, reading, and writing are more important than ever, but the manner in which these skills are developed and practiced has changed.

The introduction of technology into teaching and learning has required new skills from both teachers and students. While technology can provide teachers with a new challenge, principals believe it can also offer a significant affordance. The presence of technology encourages the rethinking of teaching and learning. Technology helps shift the instructional design process to become more authentic and connected to the real world.

Surprisingly, the concept of using technology in 21st century learning environments was mentioned by only 9% of respondents. These principals shared barriers associated with using technology more effectively to meet student needs, create real-world applications, and change instructional design. In particular, principals shared how teachers are reluctant to change instructional practice. One principal shared that she wanted her school to move beyond the notion of using the computer for just word processing. In the majority of classrooms, the use of technology becomes a task, not a transformative tool that helps move teaching and learning toward social constructivism. The literature positions technology as a key element of the 21st century learning environment. The few principals that acknowledged the importance of technology (and other resources) within their conceptualization created their own argument on which to take action as leaders.

Summary of question 1(a). From the evidence that describes the principals' view of their role in promoting global awareness in the 21st century, five significant themes captured the findings. First, thoughtful student preparation necessary for success in the 21st century was mentioned by 39% of respondents. Specifically, student aptitude with critical thinking, communication, and collaboration serve as preparation for predicted workforce trends

(Friedman, 2007; Partnership for 21st Century Skills, 2011). The second finding was teacher learning related to curriculum development. Being able to provide various professional development opportunities is imperative to this new learning. Thirdly, the school culture is shaped by the principals, which in turn can influence a school's global awareness. Fourthly, collaboration among other stakeholders emerged as the model desired in order to promote student outcomes for 21st century learning. The literature supports that an individual's lifelong learning is essential to adapt to change (Friedman, 2007). The final finding that emerged was the need for external resources— something that typically falls under the principal.

Question 1(b). What have principals done to support global-mindedness? A deeper analysis of the themes reveals patterns that offered a more detailed story about how the principals support global awareness in the 21st century. Generally, respondents embraced the ideal that all learning should be personally meaningful and relevant for real-world application. The concept of real-world application emerged as part of the data in several of the themes. In their conceptualization of teaching from a global perspective, the principals placed value on real-world application in preparation for future work. Similar importance was articulated when the principals wrote about student learning. Finally, across all themes, the view that technology is a necessary and important component of the 21st century learning emerged. In the following sections, the individual themes will be explored in terms of actualization on behalf of the principal.

Student preparation. The data pertaining to this theme supports the ideal that students engage in learning connected closely to real-world applications, particularly those associated with college, work, and careers. Nearly half (47%) of principals wrote about the need for authentic learning experiences in the classroom— relevant experiences that prepare students for

the world of college and career. One principal communicated the ideal of authentic learning in this way: “I initiated a Going GLOBAL (Growing Learning Opportunities Beyond All Limits) where teachers integrate the global perspectives into weekly lesson plans and students are given opportunities to research global issues daily.”

In describing a vision for what learning should look like in the 21st century, responding principals repeatedly connected real-world, authentic learning experiences to the world. As with their conceptualization of teaching, these principals contrasted their ideals for authentic, real-world learning with the kind of learning they observe in school today. The manner in which the participants conceptualized learning is not the norm in their schools. According to the principals, the learning they observe typically values the rituals of content delivery, memorization, and testing over meaningful learning. In response, principals stated that they still have much work to do in this area.

Teacher preparation. As found among the majority of the other themes, principals contrasted their ideals for authentic, real-world learning with the kind of learning they currently observe in their own schools. In other words, the kind of teaching and learning required for student success in the 21st century is not the norm.

To create the conditions where this type of learning can thrive requires a curriculum that is both open-ended and aligned with a forward thinking vision. That collaborative process is typically designed and led by the school principal. Research on principal instructional leadership found that in order to change practice, principals must provide both knowledge and guidance (Kennedy, 2005).

The Partnership for 21st Century Skills framework (2011) is based on the idea that 21st century student outcomes are aligned with support systems: standards/assessments, curriculum

and instruction, professional development, and learning environments. Instruction that aligns with this framework, adopted by the state of North Carolina, requires skilled teachers to have a deep knowledge of their subject. To meet that need, principals have had to rethink professional development models to meet these 21st century priorities. In the responses, 37% of principals wrote that they are currently working to better train and prepare teachers for teaching from a global perspective.

In comparison to other nations, current professional development practice in the United States falls short. On average, teachers in the United States receive 44 hours of professional development hours versus 100 or more hours teachers receive in other countries such as The Netherlands, Sweden, and Singapore (Darling-Hammond & Adamson, 2010). School systems across the country are working to develop effective high schools where the curriculum supports students' acquisition of life and career skills critical to success in the 21st century. Professional development, if designed to be more meaningful in use, can foster this development to better focus on student learning, thus creating a paradigm shift about how to structure teachers' learning to support the needs of students.

Supportive learning environments. According to Marzano et al., (2005) the school leader must be involved in behaviors such as promoting a cohesive staff and making sure stakeholders understand the purpose and vision of the school. Shaping the culture of the school is important in determining how students and teachers behave. Culture is the atmosphere of the school and the components that are important and valued.

The manner in which principals relate to teachers, students, and the school community affects the establishment and sustainability of a culture focused on student achievement. More than one fourth of principals (29%) answered that they were focused on creating such a culture

in their school. Among these answers, forging relationships and fostering an ongoing discussion with staff and students was most commonly mentioned. While the data did not reveal if principals had to create a change in the existing school culture or whether it was in place prior to their tenure, some did mention there was much work to be done in this area.

Cultures are not easily changed because they are forged based on strong beliefs and actions that have characterized the everyday workings of schools. Changing a school culture requires a break with many of the customs and norms of the known reality. This work can be intense and must be approached with a clear vision in mind. Of the principals who mentioned this necessary global awareness paradigm shift, all conveyed an understanding of the difficulties that lay ahead.

Collaboration with other stakeholders. The majority of principals (53%) mentioned that they believed in collaboration as the means to promote global awareness in their schools. The prevalence of technology has created a complex web of collaboration and communication options. While students and teachers are still expected to develop face-to-face collaboration and communication skills, the presence of technology requires collaboration and communication with others outside the classroom, synchronously and asynchronously.

Technology is a common thread that runs through the redefined skills of problem solving, critical thinking, collaboration, and communication. Technology tools offer educators and students new ways to develop and demonstrate traditional skills. Through the amplification of networks that embody the skills outlined above, technology provides access to information.

Another commonality mentioned by respondents was collaboration with community members in order to promote service opportunities. Many principals noted that they had in fact incorporated service-learning opportunities for staff and students and that they saw this as a

necessary component in global awareness. This concept fits nicely into Hett's (1993) definition of global-mindedness as "a worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members and reflects this commitment through demonstrated attitudes, beliefs, and behaviors" (p.143).

Resources. The theme of *Resources* was mentioned the least among responding principals (16%). Whenever principals wrote about resources needed in order to help promote global awareness, technology was the one most frequently mentioned.

The use of technological skills in the learning environment helps to redefine skills of communication, collaboration, problem solving, and critical thinking. Few principals shared stories of these ideas in action. However this finding supports the thinking that new ways of problem solving, thinking critically, collaborating, and using technology are not yet the norm in schools. The literature states that today's students should be collaborative problem solvers (Partnership for 21st Century Skills, 2011; Wagner, 2008). Technology has helped expand the definition of collaboration to include both face-to-face communication and virtual communication. With vast amounts of information and ideas available through the Internet, students are required to approach their work with a critical eye. Technology can aid in developing critical thinking skills by providing access to practically limitless amounts of information. Through a focus on critical thinking, students can learn to ask questions about the information they encounter. By asking good questions, they develop critical thinking skills.

The data relating to this theme supports the idea that technology can create a powerful, personalized learning experience. While the respondents shared a limited number of stories pertaining to this type of learning in their schools, several of the stories offer a glimpse into the power of technology to create a personalized learning experience. The shared stories

demonstrate how learning in a technology-rich environment no longer needs to be driven by the confining structures of a textbook lesson that engages students learning the same content, in the same manner, and at the same time.

Throughout the data set, a limited number of actual learning stories are shared that represent the principals' conceptualization. A preponderance of data represents theoretical, espoused discussions rather than actual examples of 21st century learning. As a result, it can be concluded principals are developing their conceptualization of 21st century learning. The examples of technology (and other resources) use shared by the respondents represented more "technologized" tasks than problem solving.

Summary of question 1(b). Principals recognize that in order to prepare students for a successful life in the 21st century they need to move beyond assessments and learning that address lower level thinking skills (Wagner, 2008). Principals may recognize some of the key skills that employers are looking for; however, responses in the examples given by principals support the notion that students have gaps in preparation, skills, and knowledge needed to be globally competitive (Partnership for 21st Century Skills, 2011). This current study's research supports other findings that schools are not adequately preparing or have gaps in their preparation of students in all areas of 21st century skills (Partnership for 21st Century Skills, 2011).

Question 1(c). How do the principals' viewpoint and actions relate to their level of global-mindedness? Looking at the relationship of the principals' beliefs, attitudes, and behaviors to global-mindedness, the survey showed that the average principal was moderately global-minded (mean score 110.5), and that principals' actions correlated to levels of global-mindedness. This data led to researcher to surmise that principals whose beliefs and attitudes

indicated a minor degree of global-mindedness (as measured by Hett's GMS) were also exhibiting behaviors indicative of lower levels of global awareness. Likewise, the researcher deduced that principals who scored higher on the GMS also scored significantly higher in their global awareness behaviors as represented by their global awareness scores. The resulting correlation between the two measures was determined to be 0.28, which was statistically significant ($p=0.0276$).

All of the principals used terminology associated with teaching and learning in the 21st century, but several principals gave statements that they have not yet begun to truly conceptualize the vocabulary they were using. As a result of a cross-theme analysis of the data sets, several ideas were evident: (1) there are many challenges with understanding terminology associated with 21st century teaching and learning among today's leaders; (2) there is a low frequency of conceptual understanding in-use; and (3) principals are still developing their understanding of technology integration to promote critical thinking skills. These ideas connect directly to the respondents and their roles as educational leaders. The findings of the cross-theme analysis are important for this study because they convey an in-depth story helping to frame the principals' actions pertaining to implementing the state's vision for 21st century learning.

As stated in Chapter Four, a general theme gleaned from the data was the lack of direction and support in this global paradigm shift has led to frustration and an absence of action on behalf of the principal. Of the principals who responded to the survey, nearly half voiced this concern. Without a clear action plan to implement 21st century strategies that are necessary in order to achieve the North Carolina mission, principals are left to their own devices to interpret the objective to prepare all students to be globally competitive. As evident from the data,

principals are interpreting the mission in various ways—some more aligned to the ideals of global-mindedness and some more rudimentary in nature. For example, answers ranged from implementing a cultural exchange program with a school in China to showing a movie in another language. While it was not the goal of this research study to determine the level of global awareness implementation, these data do suggest there is much work to be done to assist these educational leaders in developing and increasing their global-mindedness and the requisite skills to help translate theory into practice.

The previous sections presented findings that provide an answer to the research question focused on principals' views of their roles in promoting global awareness and the actions they have taken to actualize their perspectives. This cross-sectional analysis demonstrated that the responding principals are still developing their conceptualization of global awareness in the 21st century. The analysis also demonstrated that the principals' conceptualization was largely grounded in theory rather than experience. Many principals chose not to answer the two qualitative questions, which could indicate their unfamiliarity with the subject or general lack of knowledge.

Findings and discussion of question 2. Is the principal's level of global-mindedness, including the total score and each dimension, associated with student achievement in NC public high schools? This study failed to demonstrate an association between student achievement and a principal's global-mindedness as quantified by Hett's GMS. Similarly, associations between each of the dimensions of global-mindedness and student achievement were not detected. Less than 2% of the variation in student outcomes (ACT, EOC, graduation rate) was accounted for by the variation in the principals' global-mindedness scores after controlling for other school characteristics, such as the percentage of students receiving free and

reduced price lunches and the percentage of minority students in the school.

Global-mindedness on the part of the principal may impact student achievement, not detected in this study due to its limitations. This may have been due to the limited sample size, the cross-sectional design, biases inherent in principals who chose to respond to the survey, or other confounders not identified (limitations discussed later in this chapter). Additionally, the lack of an association may be due to a non-linear relationship between principals' global-mindedness and student achievement. However, examination of graphical plots of the outcomes with principals' GMS scores did not reveal any other discernable patterns. Due to the paucity of previous research on global-mindedness among school leaders, it is difficult to place the current results in perspective. However, it is important to note the lack of a statistically significant finding does not undermine the importance of developing globally-minded school leaders.

Findings and discussion of question 3. Do other factors influence the association, or lack of association, between global-mindedness and student achievement? This study identified several variables associated with the principal's global-mindedness. Namely, the principal's gender, race/ethnicity, and travel experience were most strongly related to global-mindedness. The school size, number of fluent languages, and years in education were marginally associated with global-mindedness. The following three sub-sections discuss the results for each dependent variable studied.

ACT composite score. The percent of students receiving free and reduced price lunch and percent of minority students were the strongest predictors of student achievement. Both of these relationships were negative—in other words, the higher the percentage of students receiving free and reduced price lunch, the lower the ACT composite score for that school.

Likewise, the higher the percentage of minority (non-White) students, the lower the school's ACT composite score.

North Carolina adopted the ACT assessment to measure a student's probability of successfully completing college course work in 2011 (North Carolina Department of Instruction, 2013). The North Carolina State Legislature chose the ACT because the assessment has been shown through research to be positively correlated to college readiness. Overarching factors that affect student performance on the ACT include: high school student achievement, extracurricular activities, family background, high school attended, socioeconomic status, and psychosocial factors (Noble, Roberts, & Sawyer, 2006).

Socioeconomic status. Numerous studies have correlated family background variables with student achievement. For instance, economically disadvantaged students or those from less educated families tend to be less successful in high school due to lower access to quality learning opportunities (Noble, Roberts, & Sawyer, 2006). Considering this idea essentially suggests that family background variables correlate with student achievement, which indirectly effects student performance on the ACT. Furthermore, it also indicates that students will perform at higher levels on the ACT if they are not economically disadvantaged or are from families with higher education levels (Noble, Roberts, & Sawyer, 2006).

The socioeconomic composition of a school may affect student achievement in several ways. First, achievement is affected through the resources available in different types of schools such as the quality of the teachers within the schools and differential expectations of students. High poverty schools tend to have a higher percentage of new teachers, teachers with fewer credentials, and teachers who are less effective than middle class schools (Clotfelter, Ladd, & Vigdor, 2007). Ingersoll (2005) found that more non-certified teachers work in high poverty

schools and that this decreases the students' opportunities to learn. In addition to having lower educational qualifications and experience, teachers in low-income schools may also have lower expectations for low-income students and a less challenging curriculum (Rumberger & Palardy, 2005). Studies examining home and school influences consistently find that individual socioeconomic status exerts a powerful influence on achievement (Caldas & Bankston, 1998; Coleman, 1966).

Race/Ethnicity. This study's findings also confirmed the majority of research focused on student achievement and race. As reported in previous chapters, students from low-income ethnically diverse subgroups are underrepresented in advanced coursework while their high-achieving White counterparts are overrepresented (Burney & Beilke, 2008). Racially imbalanced minority schools often have higher proportions of low-income children and fewer resources than schools with more White students. This leads some to argue that when controlling for racial balance, it is the socioeconomic composition of the student body that predicts achievement, not the racial balance (Ryabov & VanHook, 2007).

Additionally, this study found that the principal's race/ethnicity was marginally associated with student achievement. Among White principals, ACT scores were higher. However, it should be noted that this study's sample contained very few non-White principals (n=7).

GMS and ACT composite scores. Adjusting for these characteristics did not significantly alter the lack of an association between RMS and ACT scores as previously seen in this study. Adding RMS to the regression equation contributed less than 1% to the variance of the model. Incorporating additional principal and school characteristics into the regression model did not modify the lack of an association between RMS and student achievement.

EOC composite score. The percent of students receiving free and reduced price lunch and percent of minority students were the strongest predictors of student achievement. As seen with the ACT composite score, there was a negative relationship between the variables and EOC composite scores. In addition, school size was found to be marginally negatively associated with student achievement.

The North Carolina Supreme Court in *Leandro v. State* (1997) defined education as one in which a student receives an academic performance level at or above Level III (proficient) on the end-of-course (EOC) tests. In order to earn a high school diploma, students must score at Level III or above on standardized, end-of-course (EOC) tests. A study conducted by the North Carolina Justice Center (2010), shows that the achievement gap for EOC tests between White students and African American, Hispanic, and Native American students has not changed in ten years.

School Size. The findings in this study related to school size are consistent with the majority of the literature. Arguments for smaller school sizes are prominent. The first argues that small schools facilitate a sense of community within them, allowing students and teachers to interact in ways that promote achievement. Schools that have lower socioeconomic students and more minority students tend to gain more from smaller schools than higher socioeconomic schools and schools with fewer minorities (Lee & Smith, 2005).

The second argument asserts that large schools create a sense of alienation as teachers and students have few personal interactions, while smaller schools create a sense of community that is necessary for some students to achieve (Noguera, 2002). Noguera (2002) examined common characteristics among high schools with high concentrations of low income and minority students. He found that the most successful schools were small schools. He contends

that children in smaller schools feel closer to the staff and are able to confide in them with more ease (Noguera, 2002).

GMS and EOC composite scores. In the multi-variable setting, the principal's global-mindedness was not identified as a significant predictor of student achievement. Global-mindedness contributed less than 3% of the variation of EOC scores after considering the percent of student receiving free and reduced price lunch and the percent minority students. Adjustment for all of the potential confounders did not alter the findings.

Graduation rate. Consistent with the EOC composite score findings, percent of students receiving free and reduced price lunch, percent of minority students, and school size were negatively associated with student achievement. However, it was found that the principal's leadership experience was also negatively associated with student achievement.

The most recent state graduation rate report shows that North Carolina has been making slow but steady progress in boosting the percentage of students graduating high school (North Carolina Department of Public Instruction, 2013). Between the years of 2006 and 2013, the rate of high school students graduating (in four years) increased from 68.3% to 82.5%. However, substantial gaps in graduation rates still exist among Whites (87.1%), Blacks (79.9%), and Hispanics (77.4%) (North Carolina Department of Public Instruction, 2013).

As in other states, North Carolina's economic future depends on preparing students of every racial and ethnic background for college and/or workforce success. Although the state has succeeded at raising its high school graduation rates, it has failed to substantially close gaps in this rate between Black and White students, between Hispanic and White students, and between the economically poor and advantaged.

Leadership years. This study found that the number of a principal's year of experience

was negatively associated with student achievement. This seems counterintuitive; however, Rowan and Denk (1984), Phelps (2000), and Bruggink (2001) also found an inverse relationship between principal tenure and student achievement. It can be hypothesized that tenured principals are typically assigned to lower performing schools in order to raise achievement. This is a current trend in the U.S. whereby principals in low-achieving or high poverty, minority schools, typically transfer to less challenging schools as they gain experience (Béteille, Kalogrides, & Loeb, 2012).

Ultimately, it is the principal who is responsible for the success or failure of the school. Although teachers and students both play a role in the school's success, the final responsibility falls on the principal. The 21st century principal must possess the characteristics, skills, and abilities that effectively improve student achievement. The role expectations of the principal have prompted an increase in research regarding the effectiveness of the school principal. In particular, educational researchers are investigating what behaviors, characteristics, responsibilities, processes, and leadership styles are associated with an effective principal as it relates to student performance (Leithwood & Riehl, 2003).

Number of languages. The principal's number of fluent languages was positively, though marginally, associated with student achievement. This is consistent with Hett (1993) who found only a slight relationship between second language proficiency and global-mindedness. It could be hypothesized that speaking a second language is a function of the times in which these principals grew up. Even today, the state North Carolina does not require a world language in order to graduate high school; this is a district-based decision. It should be emphasized that the sample only yielded a small number of principals who spoke a second

language (n=3), therefore, the relationship between second language and global-mindedness is still a concept to be explored.

GMS and graduation rates. Global-mindedness was not identified as a significant predictor of student success in the multiple regression models. When principal and school characteristics were considered, the principal's global-mindedness score failed to show a significant relationship with student achievement.

Summary. Overall, the principal's global-mindedness as quantified in this study failed to show associations with student achievement. Controlling for other factors in multivariable analyses did not change this finding. As reported in multiple sources of investigations, it is not surprising that student achievement was predicted by the percentage of students receiving free and reduced price lunch and minority status.

Implications and Recommendations for Educational Leaders

School leaders must demonstrate many kinds of leadership—instructional, cultural, managerial, strategic, micropolitical, and technological (International Society for Technology in Education, 2015). Increased levels of accountability, and organizational and political complexities have further complicated educational leadership to the point where the role of a school leader is very different in the 21st century. This argument is supported by the Educational Leadership Policy Standards (The Council of Chief State School Officers, 2008), which states, “These mounting demands are rewriting administrators’ job descriptions every year, making them more complex than ever.” (p. 3) Even with mounting complexities, school leadership has been shown to be critical to student success (Leithwood et al., 2004). This section uses the approach to successful leadership as designed by Leithwood et al. (2004) coupled with the characteristics of global-mindedness as defined by Hett (1993) as a way to conceptualize

leading global awareness in today's schools. These steps are: (1) setting a vision; (2) developing people through professional development collaboration; and (3) redesigning the organization to allow for successful implementation of policy. These approaches characterize the type of leadership and direction that principals in this study reported as being absent in implementing global awareness and perspectives.

Understanding the basic core of effective school leadership provides leaders with a foundation for thinking about an expanded epistemic frame of leadership. The conceptual framework for this study acknowledges the importance of the basic leadership core outlined by Leithwood et al. (2004), which is complimented by Hett's (1993) global-mindedness research. It is argued that leading change in teaching and learning for the 21st century requires more than basic leadership. Educational leaders need to develop leadership skills, knowledge and attitudes encompassing systems thinking, types of change, and theories of action. In order to communicate a global vision for learning, school leaders must have a clear conceptualization of teaching and learning in the 21st century—one that understands the complexities that students face in the global world.

Educational leaders and organizations must begin to focus on globalization in a new and more meaningful way. They must reach beyond provincialism, beyond the competitive drive to be the best in the world or in their state, and seek to be the best they can be as leaders in global education. Given this nation's history and the politics of the day, that will be a colossal task, but a needed one for all levels of education. These same leaders and organizations need to reach out to the other facets of society, including parents, industries, and institutions. Collaborating with other stakeholders will bring about influences that help prepare students for their futures within their local and global communities.

Vision. Another dominant theme derived from this study was the need for a clearly articulated vision. A school that seeks to promote the acquisition of 21st century skills must define student outcomes that are adaptable to the unknown variables of the future and focus on lifelong learning. These outcomes must drive a vision that is embedded with fidelity into school programs and practices. The data from this study suggests that principals are lacking a systemic clarity of vision.

Measurable Outcomes. Leaders need to incorporate 21st century skills into school improvement plans and create measurable goals that are continuously monitored. Throughout the data collected in this study, the principals conveyed a comfort level with 21st century learning, but many were unclear about how to actualize these ideas. Similarly, while the majority of principals stated that they were comfortable using technology primarily for personal productivity, developing a vision for 21st century learning will require discovery of how new tools aid in the learning process. This understanding will require principals to engage in immersive learning with digital media.

Professional Development. In viewing the results this study's data, this researcher recommends principals have the opportunity to better develop an understanding of leadership behaviors needed to positively influence both school culture and student achievement. Professional development opportunities to support best practices of 21st century learning within a school can be a vehicle for principals and district leaders in this global paradigm shift. Findings from this study suggest school administrators and other educational leaders move beyond standard methods of professional development and begin to examine other ways to maximize the school day for staff and student learning. For example, principals could benefit from the development of hybrid schedules so that professional development occurs each day

within a school schedule. This technique, coupled with varying the length of classes for students, has the potential for creating the time needed to more fully address 21st century skills.

Collaboration. Meaningful learning, with or without technology tools, is associated with a social constructivist learning environment. While a few principals in this study shared examples of effective learning environments in their schools, it was found to be more the exception than the norm. Without a shift in learning environments, it will continue to be challenging for students to acquire deep conceptual understanding of content. It is suggested that principals visit and have conversations with other educators who embrace effective pedagogies and have created meaningful learning environments. Principals should work with other educators to better understand how they teach and how they can work collaboratively to grow classroom innovations throughout the school. Examples of this type of collaboration could be in the form of a cultural exchange program whereby principals visit other schools in another country with the purpose of expanding their understanding of meaningful learning. In order for meaningful learning to be the new norm throughout the state, it will be critical for principals to think systemically and develop a mechanism for sharing exemplars more broadly, moving meaningful learning practices beyond the confines of isolated classrooms and schools. This researcher recommends that today's leaders embrace technological tools and the benefits of connecting with various parts of the globe. For example, using a platform such as Skype, a principal could virtually walk the grounds of a school in China, take part in a professional development in South Africa, or exchange ideas with another principal in Brazil. The opportunities are limitless.

Policy. School reform and national school policy have attempted to tackle the need for 21st century skills through the creation of common standards and measures of success.

However, these efforts have failed to provide a clear direction for today's leaders. As indicated by principals in this study, the leaders of today do not feel adequately prepared or supported to infuse global awareness and 21st century learning into curriculum and instruction. Principals voiced concerns relating to the lack of direction from state authorities and an ambiguity in today's educational policy. This lack of definition in problem and solution creates great concern for leaders. Leaders want solutions— as do teachers, students, school boards, and other stakeholders. Therefore, it is this researcher's recommendation that today's educational leaders team up with a local or national school reform agency. Some of the leading agencies include: School Reform Initiative (SRI), The Center on Education Policy (CEP), and Alliance for Excellent Education. These agencies are tasked with researching and evaluating a multitude of educational realities in order to provide a clearer, better perspective to educators. For example Alliance for Excellent Education has a branch devoted to helping educational leaders interpret what 'preparing students to be globally competitive' means and the actions that leaders can take in order to best prepare students (Alliance for Excellent Education, 2015). This kind of collaboration would help leaders to advocate for their students while simultaneously performing the daily duties that the job demands.

This study's analysis also points to the importance of strong leadership in implementing and achieving North Carolina's education goals. The state has outlined goals for increasing student achievement and competencies required for a successful life in the 21st century. Being able to implement these goals requires today's educational leaders at the district and school level to have a common and clear understanding of the direction for global-awareness initiatives and ideals. After all, it is the leadership of the principal that is responsible for bringing these goals to fruition. This researcher recommends that today's leaders read relevant literature and

research. For example, educational leaders could greatly benefit from reading a descriptive case study of a school that has already made the commitment to 21st century skills. In addition to the reading, leaders could consider these researched implications to adapt the programs and practices to their own contexts.

Another area of policy implications is the effort to improve the academic curricular offerings for all school districts in North Carolina. Prior research shows that a focus on academic achievement coupled with high expectations for student success promotes increased student performance (Darling-Hammond, et al., 2008; Marzano, Waters, & McNulty, 2005). Additionally, the research has suggested that by offering a more rigorous curriculum, students rise to meet the high expectation. Therefore, today's leaders should focus on providing students with a more rigorous curriculum and course offerings that relate directly to the 21st century outcomes as adopted by the state of North Carolina. Examples could be: offering AP courses, incorporating a STEM focus, adopting a 1:1 technology initiative, or utilizing technology to offer virtual programs and courses of study to students.

A final area of implications for policy is related to the availability and kind of data that is used to measure and track student achievement. Due to the absence of additional, more descriptive student achievement data across high schools in North Carolina, this study used ACT, EOC, and graduation rates as a proxy for measuring student success. North Carolina Department of Public Instruction uses many data systems for tracking student performance. However, policy makers should attempt to design a better and more complete way to measure student achievement. The measures that are currently being used are quantitative in nature and do not represent a holistic picture of an individual student.

Summary. Embracing these recommendations have the potential to result in an

expanded epistemic frame of educational leadership. The primary responsibilities of principals are to envision and enact the future (Leithwood et al., 2003). Significant changes in the teaching and learning process require school leaders to embrace a form of leadership that is grounded in setting direction, developing people, and redesigning the organization.

Given that the principal as a critical player in determining the success of any program within the school, certainly his or her role in initiating and/or sustaining a successful global focus will be pivotal to student success. Thus, a principal's global-mindedness is critical factor in determining any global focus that is initiated or sustained within the school.

Limitations and Recommendations for Future Research

This research is framed around the imperative of ensuring educational leaders can develop a critical, global perspective of education; however, more research needs to be done to understand how leaders interpret, model, and lead the change. There are various ways in which this branch of study should be extended in order to contribute to literature.

Diverse population. Due to the limited scope of North Carolina principals, additional research conducted in other areas of the country, particularly those with more cultural diversity and experience, may yield different results. North Carolina's population of high school principals may be more homogeneous, and may represent a lower level of global-mindedness compared to other regions of the nation.

Data collection. While technology provides cost effective, timely communication and the collection of data, and on-line surveys provide ease of implementation for the researcher, this may have limited the number of respondents. Technology-based limitations included the blocking of emails by districts using firewalls to limit spam and solicitations. Also, limitations included respondents' inability or unfamiliarity with online survey instruments. Emails may

have been deleted by the user or classified as spam or solicitation that was not stopped by the district firewall settings. It is recommended that future research utilize additional means of data gathering, including interviews, focus groups, and broader survey approaches.

Furthermore, in terms of different forms of data collection, this research study was designed to gather numerical data in relation to time spent abroad. Certainly the types of experiences that one encounters differ greatly from a study abroad program to a family vacation. Therefore, future studies should solicit additional qualitative data that provides detailed, descriptive responses identifying the length and types of the types of cultural or personal experiences abroad as well as the knowledge gained as compared to less extensive travel experiences or time spent abroad.

Larger population. The effect size found in this study for global-mindedness and student achievement was small. The correlations ranged from 0.11 with ACT composite scores, to 0.06 with EOC composite scores, to a low of less than 0.01 with graduation rates. The power to detect effects this low was extremely small given the limited sample size of principals responding to the survey. For example, the power to detect $r=0.10$, using a two-tailed alpha level of 0.05 is 12%. If the effect size were a more moderate level, say $r=0.30$ (as found in the stratified analysis for White principals), the power would have been greater (65%), but still not desirable. In order to detect a small effect size ($ES=0.10$) as found in the current study with 80% power, a sample size of 800 would be needed. Clearly, this would not be possible with a research design limited to high school principals in the state of North Carolina. Therefore, it is recommended that a similar study be conducted with a much larger population in order to confirm or reject the findings of this study.

Longitudinal approach. The cross-sectional study design provided an assessment at one point in time, which may not illustrate long-term effects. The effects of a principal's leadership may take many years to be realized. While the present study restricted the analyses to principals who had been in their current position for at least 2 years, this time frame may not have been sufficient to see differences in achievement attributable to the principal. A longitudinal approach may be better suited to examine the temporal effects of a principal's global-mindedness on student achievement.

Additionally, this research study measured student achievement at a school level and not at the student level. It is recommended that future research track a school's progress over time to see if that school was able to improve student achievement to better measure the influence of a principal's global-mindedness.

School level. Much of the research on 21st century learning and on global awareness relates to high schools. Studies that focus on elementary programs and practices are less common. What skills and attitudes are essential for elementary students to learn in order to be prepared for 21st century learning in high school? It is recommended that additional research focus on the exploration of this question.

Student Achievement Measures. The three measures of student achievement in this research study are commonly used across the field of education. However, they all rely on indirect measures of school, teacher, and principal performance. For example, an increase in a test score is typically marked as evidence of student learning. Future research should focus on other measures of student achievement, such as formative assessments, portfolio review, cultural competencies, and curriculum-based methods for documenting knowledge of standards.

Leadership preparation. Future research should also be focused on leadership

programs in higher education. Leadership programs tend to focus on leading traditional reform models. How is the research on educational change incorporated into programs so that new school leaders acquire the necessary knowledge, skills, and attitudes for an expanded frame of leadership in the 21st century? With an expanded frame of educational leadership, higher education programs will make reinventing education a valuable component of programs. Future research will help inform higher educational leadership programs and how they prepare leaders for change.

Conclusion

The researcher intended for the findings from this study to be used to assist school leaders with promoting global-minded education by illustrating the benefit for advancing student achievement, which also addresses issues of equity for educators and students around the world. This research indicates principals are still struggling with the conceptualization of global-mindedness and its implications for teaching and learning. Responses suggest the conceptualization is more grounded in theory and there are many opportunities to operationalize the concepts in schools. Therefore, it is essential that current and prospective school leaders be provided with the educational tools and experiences that facilitate opportunities for reflection and the development of global-mindedness. In addition to supporting the use of Hett's (1993) Global-Mindedness Scale (GMS) as a tool for understanding and identifying the development of the dimensions of global-mindedness, the findings from this study may be useful for assisting school leaders and educators at all levels in identifying and understanding the dimensions of global-mindedness as a first step in the journey towards developing a global perspective of education to better address the challenges and complexities of life in the 21st century.

Studies conducted by the Asia Society (2013) and Goldman Sachs (2003) suggest knowledge about the rest of the world is no longer a luxury; it is a necessity. This is especially true of school leaders preparing for success and leadership in today's world, and it emphasizes the importance of developing a global-mindset to ensure the development of appropriate educational frameworks that balance the complex forces of life in a globalized world. For leaders, educators, and policy makers at all levels, there is an urgent need to consider and implement globally-focused educational policies, frameworks, and practices that espouse a critical theory perspective and the development of global perspectives. In the world of the 21st century and beyond, students will continue to fall behind if education is not organized with a global context in mind. Therefore, societies must ensure that current and prospective school leaders are provided with the opportunities, experiences, and necessary support to develop, understand, and embody a global-mindset.

In summary, it is recommended that educational leaders continue to develop their vision for teaching and learning in the 21st century. To acquire a deeper understanding of the skills outlined in frameworks and standards, these leaders should seek opportunities to learn more about meaningful learning in the 21st century and the accompanying instructional practices that will best prepare students.

By engaging in this work, leaders will be able to more clearly define their beliefs about schools, teaching and learning, and use their ideals to provide guidance to teachers on effective instructional practices. Working with others at all levels of the educational system is an important factor in change efforts. School leaders alone cannot develop, define, and implement this global vision of learning. Educational leaders need to work with others to bring meaningful learning to scale. Whether collaborating with peers or other community stakeholders,

educational leaders must engage the kind of analysis and reflection that Hett (1993) and other global education research studies have provided.

Appendices

Appendix A: Partnership for 21st Century Skills Framework

Appendix B: Future-Ready Students: Goals for the 21st Century

Appendix C: Characteristics of Global-Mindedness

Appendix D: Hett's Global-Mindedness Scale (GMS)

Appendix E: North Carolina Standards for Schools Executives (Principal Evaluation)

Appendix F: TIMSS 8th Grade Math Report

Appendix G: TIMSS 8th Grade Science Report

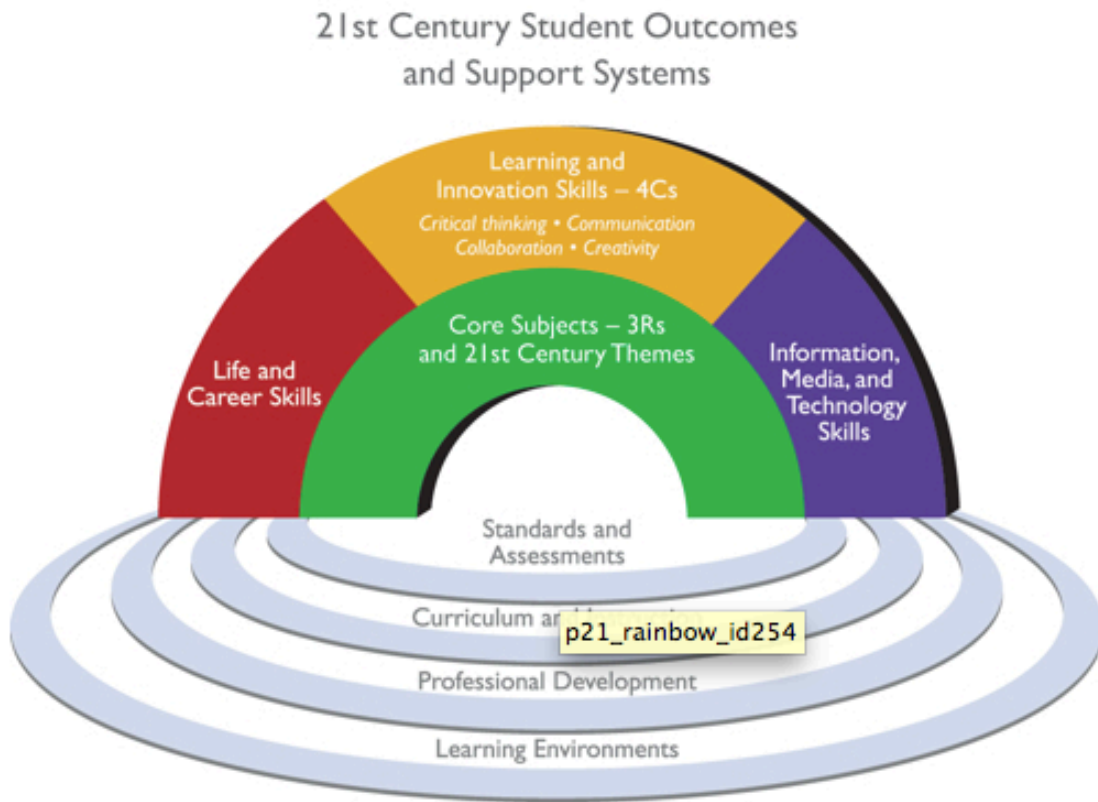
Appendix H: Principal Background Questionnaire

Appendix I: GMS Scoring Key

Appendix J: GMS Permission

Appendix K: Understanding ACT Scores

Appendix A: Partnership for 21st Century Skills Framework



(Partnership for 21st Century Skills, 2011)

Appendix B: Future-Ready Students: Goals for the 21st Century



Future-Ready Students: Goals for the 21st Century

The guiding mission of the North Carolina State Board of Education is that every public school student will graduate from high school, globally competitive for work and postsecondary education and prepared for life in the 21st century.

NC Public Schools Will Produce Globally Competitive Students.

- Every student excels in rigorous and relevant core curriculum that reflects what students need to know and demonstrate in a global 21st Century environment, including a mastery of languages, an appreciation of the arts and competencies in the use of technology.
- Every student's achievement is measured with an assessment system that informs instruction and evaluates knowledge, skills, performance and dispositions needed in the 21st Century.
- Every student will be enrolled in a course of study designed to prepare them to stay ahead of international competition.
- Every student uses technology to access and demonstrate new knowledge and skills that will be needed as a life-long learner to be competitive in a constantly changing international environment.
- Every student has the opportunity to graduate from high school with an Associate's Degree or college transfer credit.

NC Public Schools Will Be Led By 21st Century Professionals.

- Every teacher will have the skills to deliver 21st Century content in a 21st Century context with 21st Century tools and technology that guarantees student learning.
- Every teacher and administrator will use a 21st Century assessment system to inform instruction and measure 21st Century knowledge, skills, performance and dispositions.
- Every education professional will receive preparation in the interconnectedness of the world with knowledge and skills, including language study.
- Every education professional will have 21st Century preparation and access to ongoing, high quality professional development aligned with State Board of Education priorities.
- Every educational professional uses data to inform decisions.

NC Public School Students Will Be Healthy and Responsible.

- Every learning environment will be inviting, respectful, supportive, inclusive and flexible for student success.
- Every school provides an environment in which each child has positive, nurturing relationships with caring adults.
- Every school promotes a healthy, active lifestyle where students are encouraged to make responsible choices.
- Every school focuses on developing strong student character, personal responsibility and community/world involvement.
- Every school reflects a culture of learning that empowers and prepares students to be life-long learners.

Leadership Will Guide Innovation in NC Public Schools.

- School professionals will collaborate with national and international partners to discover innovative transformational strategies that will facilitate change, remove barriers for 21st Century learning and understand global connections.
- School leaders will create a culture that embraces change and promotes dynamic, continuous improvement.
- Educational professionals will make decisions in collaboration with parents, students, businesses, education institutions, and faith-based and other community and civic organizations to impact student success.
- Public school professionals will collaborate with community colleges and public and private universities and colleges to provide enhanced educational opportunities for students.

NC Public Schools Will Be Governed and Supported By 21st Century Systems.

- Processes are in place for financial planning and budgeting that focus on resource attainment and alignment with priorities to maximize student achievement.
- Twenty-first century technology and learning tools are available and are supported by school facilities that have the capacity for 21st Century learning.
- Information and fiscal accountability systems are capable of collecting relevant data and reporting strategic and operational results.
- Procedures are in place to support and sanction schools that are not meeting state standards for student achievement.

(North Carolina State Board of Education, 2008)

Appendix C: Characteristics of Global-Mindedness

1. Possession of certain personal attributes: Tend to be inquisitive, flexible, tolerant of ambiguity, and open-minded; seeks opportunities for hearing the “other” and for learning about those different from themselves.
2. Belief in the unity of humanity: Have looked within and in that self-reflection, have found their own connection to the larger world community; are aware of the common thread that links them to other people everywhere; and feel a sense of global belonging.
3. Are cultural pluralists: Understand culture and how it influences worldview and behavior and, more than this find great pleasure in the diversity and challenge that cross-cultural experiences have brought into their lives.
4. Oppose prejudice: Reject all forms of prejudice, including ethnocentrism, chauvinism, and racial prejudice because they see beyond the superficialities of culture, color, religion, etc., to the essence of a shared human experience on earth.
5. Are activists: Live their vision by acting; have a sense of empowerment; believe in the importance of doing something; whether in one’s own community or on a global level; possess a sense that they can make a difference.
6. Exhibit environmental concern: Are concerned for the well being of the planet.
7. Understand the interconnectedness of the global community: Feel a sense of kinship and connectedness with the human family and see the benefits of this growing interconnection for their own culture of nation.
8. Have a sense of responsibility and care, are aware of their role within an extended community, feel a sense of responsibility towards the global community.
9. Possess additional language ability: believe that second language ability is important in

order to be able to make switches internally to other frames of reference or worldviews.

10. Seek to learn: are active seekers of information about the global arena through reading, meeting people from other countries, and taking classes which have an international focus.
11. Possess a futurist perspective: have a long term perspective and try to be cognizant of the future.

(Hett, 1993)

Appendix D: Hett's Global-Mindedness Scale (GMS)

Dear Principal:

In an effort to understand how principals in NC are responding to challenges in the 21st century, I am conducting a survey of all current principals as part of my doctoral dissertation at UNC-Chapel Hill. NCDPI provided your name and contact information to enable you to receive this survey. This voluntary research study is designed to gather information on principals' attitudes towards a variety of topics related to the world. There are no right or wrong answers, and your responses will be combined with those of other NC principals. Your opinions are very valuable and all answers will be kept entirely confidential. You will not be identified and all responses will be presented in aggregate.

I know your time is very limited, but your input is very important in informing NCDPI of the needs of high school principals. The majority of this survey will require you to rate a question on a scale (strongly disagree to strongly agree). You should be able to complete the survey in 10 minutes or less.

For each survey completed, \$1.00 will be donated to a charity that you choose AND you will be entered into a prize drawing for a \$100 Target gift card. Additionally, results of the survey will be made available to you by checking the appropriate response at the end of the survey.

Thank you again for your assistance!

Betsy Sutherland

Please indicate the charity you wish to receive the contribution for you participation.

- ☐ Susan G. Komen for the Cure
- ☐ Make a Wish Foundation
- ☐ American Society for the Prevention of Cruelty to Animals (ASPCA)

Consent Form Version Date: 12-01-2014

IRB Study # 14-2434

Title of Study: Preparing students to be globally competitive in the 21st century: Exploring educational leader's global-mindedness and student achievement in North Carolina public high schools

Principal Investigator: Betsy Sutherland

Principal Investigator Department: School of Education Deans Office

Principal Investigator Phone number: 843-991-4131

Principal Investigator Email Address: bsuther@email.unc.edu

Faculty Advisor: Dana Thompson Dorsey

Faculty Advisor Contact Information: 919-843-5249

What if you have questions about this study?

You have the right to ask, and have answered, any questions you may have about this research. If you have questions about the study (including payments), complaints, concerns, or if a research-related injury occurs, you should contact the principal investigator listed above.

What if you have questions about your rights as a research participant?

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject, or if you would like to obtain information or offer input, you may contact the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

Directions: Please read each statement and decide whether or not you agree with it. Mark the response that reflects your opinion most closely. There are no correct answers.

Q1 I generally find it stimulating to spend an evening with people from another country.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q2 I feel an obligation to speak out when I see our government doing something I consider wrong.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q3 The United States is enriched by the fact that it is comprised of many people from different cultures and countries.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q4 Really, there is nothing I can do about the problems of the world.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q5 The needs of the United States must continue to be our highest priority in negotiating with other countries.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q6 I often think about the kind of world we are creating for future generations.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q7 When I hear that thousands of people are starving in an African country, I feel very frustrated.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q8 Americans can learn something of value from all different cultures.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q9 Generally, an individual's actions are too small to have a significant effect on the ecosystem.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q10 Americans should be permitted to pursue the standard of living they can afford if it has a slightly negative impact on the environment.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q11 I think of myself, not only as a citizen of my country, but also as a citizen of the world.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q12 When I see the condition some people in the world live under, I feel a responsibility to do something about it.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q13 I enjoy trying to understand peoples' behavior in the context of their culture.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q14 My opinions about national policies are based on how those policies might affect the rest of the world, as well as the United States.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q15 It is very important to me to choose a career in which I can have a positive effect on the quality of life for future generations.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q16 America's values are probably the best.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q17 In the long run, Americans will probably benefit from the fact that the world is becoming more interconnected.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q18 The fact that a flood can kill 50,000 in Bangladesh is very depressing to me.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q19 It is important that American universities and colleges provide programs designed to promote understanding among students of different ethnic and cultural backgrounds.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q20 I think my behavior can impact people in other countries.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q21 The present distribution of the world's wealth and resources should be maintained because it promotes survival of the fittest.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q22 I feel a strong kinship with the worldwide human family.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q23 I feel very concerned about the lives of people who live in politically repressive regimes.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q24 It is important that we educate people to understand the impact that current policies might have on future generations.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q25 It is not really important to me to consider myself as a member of the global community.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q26 I sometimes try to imagine how a person who is always hungry must feel.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q27 I have very little in common with people in underdeveloped nations.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q28 I am able to affect what happens on a global level by what I do in my own community.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q29 I sometimes feel irritated with people from other countries because they don't understand how we do things here.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Q30 Americans have a moral obligation to share their wealth with the less fortunate people of the world.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Appendix E: North Carolina Standards for Schools Executives (Principal Evaluation)

North Carolina Standards for School Executives

*As Approved by the State Board of Education
December 7, 2006*

A New Vision of School Leadership

Public education's changed mission dictates the need for a new type of school leader – an executive instead of an administrator. No longer are school leaders just maintaining the status quo by managing complex operations, but just like their colleagues in business, they must be able to create schools as organizations that can learn and change quickly if they are to improve performance. Schools need executives who are adept at creating systems for change and at building relationships with and across staff that not only tap into the collective knowledge and insight they possess but powerful relationships that also stir their passions for their work with children. Out of these relationships the executive must create among staff a common shared understanding for the purpose of the work of the school, its values that direct its action, and commitment and ownership of a set of beliefs and goals that focus everyone's decision making. The staff's common understanding of the school's identity empowers them to seek and build powerful alliances and partnerships with students, parents and community stakeholders in order to enhance their ability to produce increased student achievement. The successful work of the new executive will only be realized in the creation of a culture in which leadership is distributed and encouraged with teachers, which consists of open, honest communication, which is focused on the use of data, teamwork, research-based best practices, and which uses modern tools to drive ethical and principled, goal-oriented action. This culture of disciplined thought and action is rooted in the ability of the relationships among all stakeholders to build a trusting, transparent environment that reduces all stakeholders' sense of vulnerability as they address the challenges of transformational change.

Philosophical Foundations of the Standards

The standards are predicated on the following beliefs:

- ⌘ Today schools must have proactive school executives who possess a great sense of urgency.
- ⌘ The goal of school leadership is to transform schools so that large-scale, sustainable, continuous improvement becomes built in to their mode of operation.
- ⌘ The moral purpose of school leadership is to create schools in which all students learn, the gap between high and low performance is greatly diminished and what students learn will prepare them for success in their futures, not ours.
- ⌘ Leadership is not a position or a person. It is a practice that must be embedded in all job roles at all levels of the school district.
- ⌘ The work of leadership is about working with, for and through people. It is a social act. Whether we are discussing instructional leadership, change leadership or leadership as learning, people are always the medium for the leader.
- ⌘ Leadership is not about doing everything oneself but it is always about creating processes and systems that will cause everything to happen.
- ⌘ Leadership is about the executive's ability to select and develop a strong executive staff whose complementary strengths promote excellence in all seven functions of leadership identified in this document.
- ⌘ The concept of leadership is extremely complex and systemic in nature. Isolating the parts of leadership completely misses the power of the whole. It is not just knowing what to do, but why to do it, how to do it and when to do it.
- ⌘ Within a school district there are nested leadership systems (local boards of education, central office, school, and classroom). For the organization to be successful these systems must be aligned and supportive, and function as a team.
- ⌘ Leadership is about setting direction, aligning and motivating people to implement positive sustained improvement.
- ⌘ Leaders bring their "person" to the practice of leadership. Matching the context of leadership to the "person" of the individual is important to the success of the leader.

Intended Purposes of the Standards

The North Carolina School Executive Standards have been developed as a guide for principals and assistant principals as they continually reflect upon and improve their effectiveness as leaders throughout all of the stages of their careers. Although there are many influences on a school executive's development, these standards will serve as an important tool for principals and assistant principals as they consider their growth and development as executives leading schools in the 21st century. Taken as a whole these standards, practices and competencies are overwhelming. One might ask, "How can one person possess all of these?" The answer is, one person cannot. It is, therefore, imperative that a school executive understands the importance of building an executive team that has complementary skills. The more diversity that exists on the team the more likely the team will be to demonstrate high performance in all critical function areas. The main responsibility of the school executive is to create aligned systems of leadership throughout the school and its community.

In addition, these standards will serve other audiences and purposes. These standards will:

- ⌘ Inform higher education programs in developing the content and requirements of school executive degree programs;
- ⌘ Focus the goals and objectives of districts as they support, monitor and evaluate their school executives;
- ⌘ Guide professional development for school executives;
- ⌘ Serve as a tool in developing coaching and mentoring programs for school executives.

Organization of the Standards

Each standard is formatted as follows:

- ⌘ **Standard:** The standard is the broad category of the executive's knowledge and skills.
- ⌘ **Summary:** The summary more fully describes the content and rationale of each Standard.
- ⌘ **Practices:** The practices are statements of what one would see an effective executive doing in each Standard. The lists of practices are not meant to be exhaustive.
- ⌘ **Artifacts:** The artifacts are evidence of the quality of the executive's work or places where evidence can be found in each Standard. Collectively they could be the components of a performance portfolio. The lists of artifacts are not meant to be exhaustive.

- ⌘ **Competencies:** Although not articulated, there are many obvious competencies inherent in the practices of each critical leadership function. This document concludes with a list of those competencies which may not be obvious but that support practice in multiple leadership functions.

The Seven Standards of Executive Leadership and Their Connection

Relevant national reports and research in the field focused on identifying the practices of leadership that impact student achievement were considered in the development of these standards. Particularly helpful were the Maryland Instructional Leadership Framework, and work by the Wallace Foundation, the Mid-continental Regional Education Laboratory, the Charlotte Advocates for Education and the Southern Regional Education Board. Work by the National Staff Development Council, the National Association of Secondary School Principals, the National Association of Elementary School Principals, the National Middle School Association, the Interstate School Leader Licensure Consortium, and the National Policy Board for Educational Administration Education Leadership Constituent Council were also considered in the development of these standards. Additionally, input was solicited from stakeholders and leaders in the field.

The seven critical standards used as the framework for the North Carolina School Executive Standards are borrowed from a Wallace Foundation study, *Making Sense of Leading Schools: A Study of the School Principalship* (2003). Unlike many current efforts that look at all of the things principals "might" or "should" do, this study examined what principals actually do. As such, it is grounded in practice, exploits story and narrative, and supports the distribution of leadership rather than the "hero leader."

North Carolina's Standards for School Executives are interrelated and connect in executives' practice. They are not intended to isolate competencies or practices. Executives' abilities in each standard will impact their ability to perform effectively in other standard areas. For example, the ability of an executive to evaluate and develop staff will directly impact the school's ability to reach its goals and will also impact the norms of the culture of the school. School executives are responsible for ensuring that leadership happens in all seven critical areas, but they don't have to provide it.

The standards and their practices follow.

Standard 1: Strategic Leadership

Summary: School executives will create conditions that result in strategically re-imagining the school's vision, mission, and goals in the 21st century. Understanding that schools ideally prepare students for an unseen but not altogether unpredictable future, the leader creates a climate of inquiry that challenges the school community to continually re-purpose itself by building on its core values and beliefs about its preferred future and then developing a pathway to reach it.

Practices: The school executive practices effective strategic leadership when he or she:

- ⌘ Is able to share a vision of the changing world in the 21st century that schools are preparing children to enter;
- ⌘ Systematically challenges the status quo by leading change with potentially beneficial outcomes;
- ⌘ Systematically considers new ways of accomplishing tasks and is comfortable with major changes in how processes are implemented;
- ⌘ Utilizes data from the NC Teacher Working Conditions Survey in developing the framework for continual improvement in the School Improvement Plan;
- ⌘ Is a driving force behind major initiatives that help students acquire 21st century skills;
- ⌘ Creates with all stakeholders a vision for the school that captures peoples' attention and imagination;
- ⌘ Creates processes that provide for the periodic review and revision of the school's vision, mission, and strategic goals by all school stakeholders;
- ⌘ Creates processes to ensure the school's identity (vision, mission, values, beliefs and goals) actually drive decisions and inform the culture of the school;
- ⌘ Adheres to statutory requirements regarding the School Improvement Plan;
- ⌘ Facilitates the collaborative development of annual school improvement plans to realize strategic goals and objectives;
- ⌘ Facilitates the successful execution of the school improvement plan aligned to the mission and goals set by the State Board of Education;
- ⌘ Facilitates the implementation of state education policy inside the school's classrooms;
- ⌘ Facilitates the setting of high, concrete goals and the expectations that all students meet them;
- ⌘ Communicates strong professional beliefs about schools, teaching, and learning that reflect latest research and best practice in preparing students for success in college or in work;
- ⌘ Creates processes to distribute leadership throughout the school.

Artifacts:

- ⌘ Degree to which school improvement plan strategies are implemented, assessed and modified
- ⌘ Evidence of an effectively functioning, elected School Improvement Team
- ⌘ NC Teacher Working Conditions Survey
- ⌘ School improvement plan, its alignment with district and state strategic priorities, and a plan for growth on items of concern as evidenced in the NC TWC Survey
- ⌘ The degree to which staff can articulate the school's direction and focus
- ⌘ Student testing data

Standard 2: Instructional Leadership

Summary: School executives will set high standards for the professional practice of 21st century instruction and assessment that result in a no nonsense accountable environment. The school executive must be knowledgeable of best instructional and school practices and must use this knowledge to cause the creation of collaborative structures within the school for the design of highly engaging schoolwork for students, the on-going peer review of this work and the sharing of this work throughout the professional community.

Practices: The school executive practices effective instructional leadership when he or she:

- ⌘ Focuses his or her own and others' attention persistently and publicly on learning and teaching by initiating and guiding conversations about instruction and student learning that are oriented towards high expectations and concrete goals;
- ⌘ Creates an environment of practiced distributive leadership and teacher empowerment;
- ⌘ Demonstrates knowledge of 21st century curriculum, instruction, and assessment by leading or participating in meetings with teachers and parents where these topics are discussed, and/or holding frequent formal or informal conversations with students, staff and parents around these topics;
- ⌘ Ensures that there is an appropriate and logical alignment between the curriculum of the school and the state's accountability program;
- ⌘ Creates processes and schedules that facilitate the collaborative (team) design, sharing, evaluation, and archiving of rigorous, relevant, and engaging instructional lessons that ensure students acquire essential knowledge;
- ⌘ Challenges staff to reflect deeply on and define what knowledge, skills and concepts are essential to the complete educational development of students;
- ⌘ Creates processes for collecting and using student test data and other formative data from other sources for the improvement of instruction;

- ⌘ Creates processes for identifying, benchmarking and providing students access to a variety of 21st century instructional tools (e.g., technology) and best practices for meeting diverse student needs;
- ⌘ Creates processes that ensure the strategic allocation and use of resources to meet instructional goals and support teacher needs;
- ⌘ Creates processes to provide formal feedback to teachers concerning the effectiveness of their classroom instruction;
- ⌘ Creates processes that protect teachers from issues and influences that would detract from their instructional time;
- ⌘ Systematically and frequently observes in classrooms and engages in conversation with students about their learning.

Artifacts:

- ⌘ School improvement plan
- ⌘ NC Teacher Working Conditions Survey
- ⌘ Student achievement data
- ⌘ Dropout data
- ⌘ Teacher retention data
- ⌘ Documented use of formative assessment instruments to impact instruction
- ⌘ Development and communication of goal-oriented personalized education plans for identified students (ESOL, exceptional children, Level I and Level II children)
- ⌘ Evidence of the team development and evaluation of classroom lessons

Standard 3: Cultural Leadership

Summary: School executives will understand and act on the understanding of the important role a school's culture contributes to the exemplary performance of the school. School executives must support and value the traditions, artifacts, symbols and positive values and norms of the school and community that result in a sense of identity and pride upon which to build a positive future. A school executive must be able to "reculture" the school if needed to align with school's goals of improving student and adult learning and to infuse the work of the adults and students with passion, meaning and purpose. Cultural leadership implies understanding the school as the people in it each day, how they came to their current state, and how to connect with their traditions in order to move them forward to support the school's efforts to achieve individual and collective goals.

Practices: The school executive practices effective cultural leadership when he or she:

- ⌘ Creates a collaborative work environment predicated on site-based management that supports the "team" as the basic unit of learning and decision-making within the school and promotes cohesion and cooperation among staff;
- ⌘ Communicates strong ideals and beliefs about schooling, teaching, and professional learning communities with teachers, staff, parents, and students and then operates from those beliefs;
- ⌘ Influences the evolution of the culture to support the continuous improvement of the school as outlined in the school improvement plan;
- ⌘ Systematically develops and uses shared values, beliefs and a shared vision to establish a school identity that emphasizes a sense of community and cooperation to guide the disciplined thought and action of all staff and students;
- ⌘ Systematically and fairly acknowledges failures and celebrates accomplishments of the school and staff;
- ⌘ Visibly supports the positive, culturally-responsive traditions of the school community;
- ⌘ Promotes a sense of well-being among staff, students and parents;
- ⌘ Builds a sense of efficacy and empowerment among staff that result in a "can do" attitude when faced with challenges;
- ⌘ Empowers staff to recommend creative 21st century concepts for school improvement.

Artifacts:

- ⌘ Work of Professional Learning Communities within and tangential to the school
- ⌘ Documented use of the SIT in decision-making throughout the year
- ⌘ NC Teacher Working Conditions Survey
- ⌘ School improvement plan
- ⌘ Teacher retention data
- ⌘ Student achievement data
- ⌘ Awards structure developed by school

Standard 4: Human Resource Leadership

Summary: School executives will ensure that the school is a professional learning community. School executives will ensure that processes and systems are in place that result in the recruitment, induction, support, evaluation, development and retention of a high performing staff. The school executive must engage and empower accomplished teachers in a distributive leadership manner, including support of teachers in day-to-day decisions such as discipline, communication with parents, and protecting teachers

from duties that interfere with teaching, and must practice fair and consistent evaluation of teachers. The school executive must engage teachers and other professional staff in conversations to plan their career paths and support district succession planning.

Practices: The school executive practices effective human resource leadership when he or she:

- ⌘ Provides structures for the development of effective professional learning communities aligned with the school improvement plan, focused on results, and characterized by collective responsibility for instructional planning and for 21st century student learning;
- ⌘ Models the importance of continued adult learning by engaging in activities to develop personal knowledge and skill along with expanded self – awareness;
- ⌘ Communicates a positive attitude about the ability of staff to accomplish substantial outcomes to improve their efficacy;
- ⌘ Creates processes for teachers to assume leadership and decision making roles within the school that foster their career development;
- ⌘ Creates and monitors processes for hiring, inducting and mentoring new teachers and other staff to the school;
- ⌘ Uses the results of the Teacher Working Conditions Survey to create and maintain a positive work environment for teachers and other staff;
- ⌘ Evaluates teachers and other staff in a fair and equitable manner and utilizes the results of evaluations to improve performance;
- ⌘ Provides for results-oriented professional development that is aligned with identified 21st century curricular, instructional, and assessment needs, is connected to school improvement goals and is differentiated based on staff needs;
- ⌘ Continuously searches for the best placement and utilization of staff to fully benefit from their strengths;
- ⌘ Is systematically and personally involved in the school's professional activities.

Artifacts:

- ⌘ School improvement plan
- ⌘ NC Teacher Working Conditions Survey – with special emphasis on the leadership and empowerment domains
- ⌘ Copy of master school schedule documenting the time provided for individual and collaborative planning for every teacher
- ⌘ Number of National Board Certified teachers
- ⌘ Teacher retention data
- ⌘ Number of teachers pursuing school executive credentials, National Board Certification, or advanced licensure in their teaching areas
- ⌘ Records of school visits for the purpose of adult learning

- ⌘ Record of professional development provided staff and an assessment of the impact of professional development on student learning
- ⌘ Mentor records, beginning teacher feedback, and documentation of correlation of assignment of mentor to mentee
- ⌘ Copies of professional growth plans
- ⌘ Student achievement data

Standard 5: Managerial Leadership

Summary: School executives will ensure that the school has processes and systems in place for budgeting, staffing, problem solving, communicating expectations and scheduling that result in organizing the work routines in the building. The school executive must be responsible for the monitoring of the school budget and the inclusion of all teachers in the budget decisions so as to meet the 21st century needs of every classroom. Effectively and efficiently managing the complexity of every day life is critical for staff to be able to focus its energy on improvement.

Practices: The school executive practices effective managerial leadership when he or she:

- ⌘ Creates processes to provide for a balanced operational budget for school programs and activities;
- ⌘ Creates processes to recruit and retain a high-quality workforce in the school that meets the diverse needs of students;
- ⌘ Creates processes to identify and solve, resolve, dissolve or absolve school-based problems/ conflicts in a fair, democratic way;
- ⌘ Designs a system of communication that provides for the timely, responsible sharing of information to, from, and with school and district staff;
- ⌘ Designs scheduling processes and protocols that maximize staff input and addresses diverse student learning needs;
- ⌘ Develops a master schedule for the school to maximize student learning by providing for individual and on-going collaborative planning for every teacher;
- ⌘ Collaboratively develops and enforces clear expectations, structures, rules and procedures for students and staff.

Artifacts:

- ⌘ NC Teacher Working Conditions Survey
- ⌘ School Improvement Plan
- ⌘ External reviews, such as budget
- ⌘ Copies of master schedules/procedures
- ⌘ Communication of safety procedures and behavioral expectations throughout the school community

Standard 6: External Development Leadership

Summary: A school executive will design structures and processes that result in community engagement, support, and ownership. Acknowledging that schools no longer reflect but in fact build community, the leader proactively creates with staff opportunities for parents, community and business representatives to participate as “stockholders” in the school such that continued investments of resources and good will are not left to chance.

Practices: The school executive practices effective external development leadership when he or she:

- ⌘ Implements processes that empower parents and other stakeholders to make significant decisions;
- ⌘ Creates systems that engage all community stakeholders in a shared responsibility for student and school success;
- ⌘ Designs protocols and processes that ensure compliance with state and district mandates;
- ⌘ Creates opportunities to advocate for the school in the community and with parents;
- ⌘ Communicates the school’s accomplishments to the district office and public media in accordance with LEA policies;
- ⌘ Garners fiscal, intellectual and human resources from the community that support the 21st century learning agenda of the school;
- ⌘ Builds relationships with individuals and groups to support specific aspects of the learning improvement agenda and also as a source of general good will.

Artifacts:

- ⌘ PTSA participation
- ⌘ PTSA meeting agendas, bulletins, etc.
- ⌘ Parent attendance at school improvement team meetings
- ⌘ Survey results from parents
- ⌘ Evidence of visible support from community
- ⌘ Booster club participation
- ⌘ Number of school volunteers
- ⌘ Plan for shaping the school’s image throughout the community
- ⌘ PTSA membership
- ⌘ Evidence of business partnerships and projects involving business partners

Standard 7: Micropolitical Leadership

Summary: The school executive will build systems and relationships that utilize the staff’s diversity, encourage constructive ideological conflict in order to leverage staff expertise, power and influence to realize the school’s vision for success. The executive will also creatively employ an awareness of staff’s professional needs, issues, and interests to build social cohesion and to facilitate distributed governance and shared decision-making.

Practices: The school executive practices effective micropolitical leadership when he or she:

- ⌘ Uses the School Improvement Team to make decisions and provides opportunities for staff to be involved in developing school policies;
- ⌘ Creates an environment and mechanisms to ensure all internal stakeholder voices are heard and respected;
- ⌘ Creates processes and protocols to buffer and mediate staff interests;
- ⌘ Is easily accessible to teachers and staff;
- ⌘ Designs transparent systems to equitably manage human and financial resources;
- ⌘ Demonstrates sensitivity to personal needs of staff;
- ⌘ Demonstrates awareness of informal groups and relationships among school staff and utilizes these as a positive resource;
- ⌘ Demonstrates awareness of hidden and potentially discordant issues in the school;
- ⌘ Encourages people to express opinions contrary to those of authority;
- ⌘ Demonstrates ability to predict what could go wrong from day to day;
- ⌘ Uses performance as the primary criterion for reward and advancement;
- ⌘ Maintains high visibility throughout the school;
- ⌘ Maintains open, vertical and horizontal communications throughout the school community.

Artifacts:

- ⌘ NC Teacher Working Conditions Survey
- ⌘ Teacher retention data
- ⌘ Dissemination of clear norms and ground rules
- ⌘ Evidence of ability to confront ideological conflict and then reach consensus
- ⌘ Evidence of shared decision-making
- ⌘ Evidence of use of a decision matrix
- ⌘ Evidence of a school that operates through teams
- ⌘ Evidence of distributed leadership

Competencies

A competency is a combination of knowledge (factual and experiential) and skills that one needs to effectively implement the practices. Factual knowledge is simply “knowing” content; experiential knowledge is the knowledge one gains from understanding – it is knowing the when and why. Skills bring structure to experiential knowledge. It is when one can put their accumulated knowledge into a series of steps that – if followed – will lead to practice.

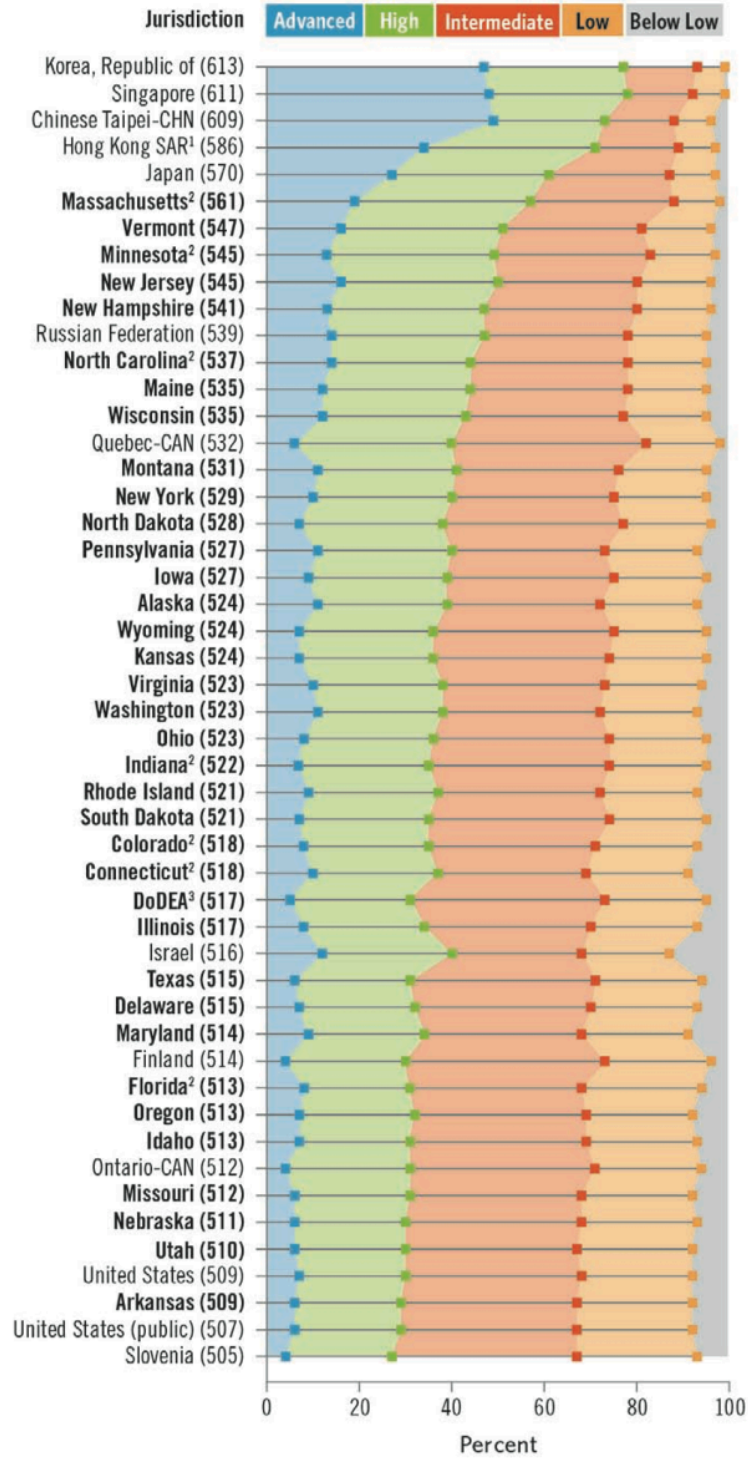
There are many competencies that are obviously inherent in the successful performance of all of the practices listed under each of the seven critical functions of leadership. The principal may or may not personally possess all of these competencies but must ensure that a team is in place that not only possesses them but can effectively and efficiently execute them. Although the principal may not personally possess them all, he or she is still responsible for their effective use in the various leadership practices.

The competencies listed below are not so obvious in the practices, can be applied to multiple practices and are absolutely essential for all school executives to possess to ensure their success. For example, the competency – conflict management is important in Micropolitical Leadership, Strategic Leadership, Cultural Leadership, and perhaps one could argue that this competency is necessary in all seven Standards. These competencies are listed here to emphasize their importance and to make sure they are incorporated into the development of school executives.

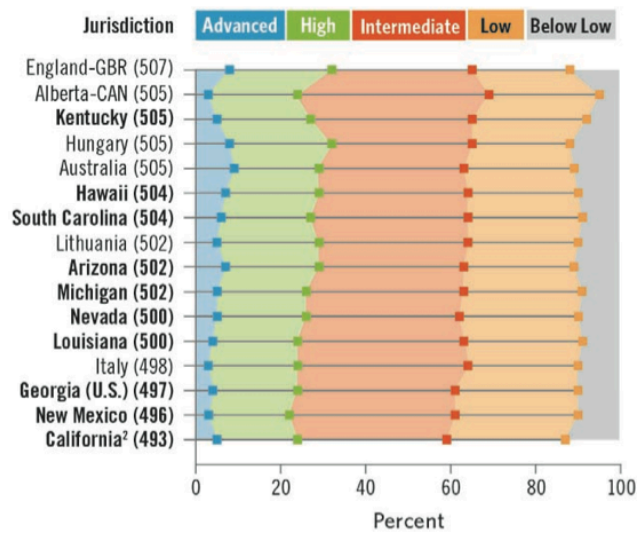
- ⌘ **Communication** – Effectively listens to others; clearly and effectively presents and understands information orally and in writing; acquires, organizes, analyzes, interprets, maintains information needed to achieve school or team 21st century objectives.
- ⌘ **Change Management** – Effectively engages staff and community in the change process in a manner that ensures their support of the change and its successful implementation.
- ⌘ **Conflict Management** – Anticipates or seeks to resolve confrontations, disagreements, or complaints in a constructive manner.
- ⌘ **Creative Thinking** – Engages in and fosters an environment for others to engage in innovative thinking.
- ⌘ **Customer Focus** – Understands the students as customers of the work of schooling and the servant nature of leadership and acts accordingly.
- ⌘ **Delegation** – Effectively assigns work tasks to others in ways that provide learning experiences for them and in ways that ensure the efficient operation of the school.
- ⌘ **Dialogue/Inquiry** – Is skilled in creating a risk free environment for engaging people in conversations that explore issues, challenges or bad relationships that are hindering school performance.
- ⌘ **Emotional Intelligence** – Is able to manage oneself through self awareness and self management and is able to manage relationships through empathy, social awareness and relationship management. This competency is critical to building strong, transparent, trusting relationships throughout the school community.
- ⌘ **Environmental Awareness** – Becomes aware and remains informed of external and internal trends, interests and issues with potential impacts on school policies, practices, procedures and positions.
- ⌘ **Global Perspective** – Understands the competitive nature of the new global economy and is clear about the knowledge and skills students will need to be successful in this economy.
- ⌘ **Judgment** – Effectively reaching logical conclusions and making high quality decisions based on available information. Giving priority and caution to significant issues. Analyzing and interpreting complex information.
- ⌘ **Organizational Ability** – Effectively plans and schedules one’s own and the work of others so that resources are used appropriately, such as scheduling the flow of activities and establishing procedures to monitor projects.
- ⌘ **Personal Ethics and Values** – Consistently exhibits high standards in the areas of honesty, integrity, fairness, stewardship, trust, respect, and confidentiality.
- ⌘ **Personal Responsibility for Performance** – Proactively and continuously improves performance by focusing on needed areas of improvement and enhancement of strengths; actively seeks and effectively applies feedback from others; takes full responsibility for one’s own achievements.
- ⌘ **Responsiveness** – Does not leave issues, inquiries or requirements for information go unattended. Creates a clearly delineated structure for responding to requests/situations in an expedient manner.
- ⌘ **Results Orientation** – Effectively assumes responsibility. Recognizes when a decision is required. Takes prompt action as issues emerge. Resolves short-term issues while balancing them against long-term goals.
- ⌘ **Sensitivity** – Effectively perceives the needs and concerns of others; deals tactfully with others in emotionally stressful situations or in conflict. Knows what information to communicate and to whom. Relates to people of varying ethnic, cultural, and religious backgrounds.
- ⌘ **Systems Thinking** – Understands the interrelationships and impacts of school and district influences, systems and external stakeholders, and applies that understanding to advancing the achievement of the school or team.
- ⌘ **Technology** – Effectively utilizes the latest technologies to continuously improve the management of the school and enhance student instruction.
- ⌘ **Time Management** – Effectively uses available time to complete work tasks and activities that lead to the achievement of desired work or school results. Runs effective meetings.
- ⌘ **Visionary** – Encourages imagineering by creating an environment and structure to capture stakeholder dreams of what the school could become for all the students.

Appendix F: TIMSS 8th Grade Math Report

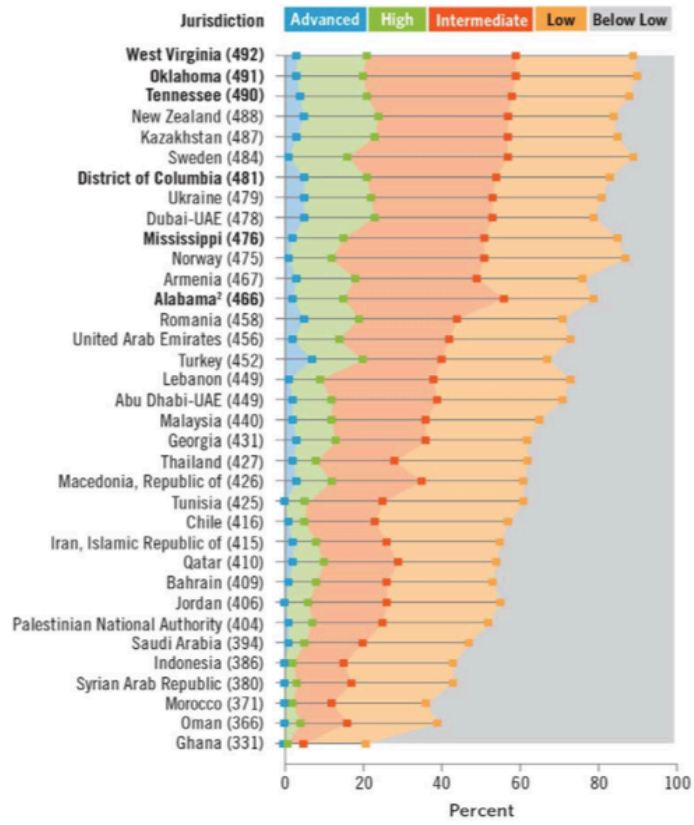
Benchmark-level results in TIMSS eighth-grade mathematics for students with average scores higher than the TIMSS average, by jurisdiction: 2011



Benchmark-level results in TIMSS eighth-grade mathematics for students with average scores not significantly different from the TIMSS average, by jurisdiction: 2011



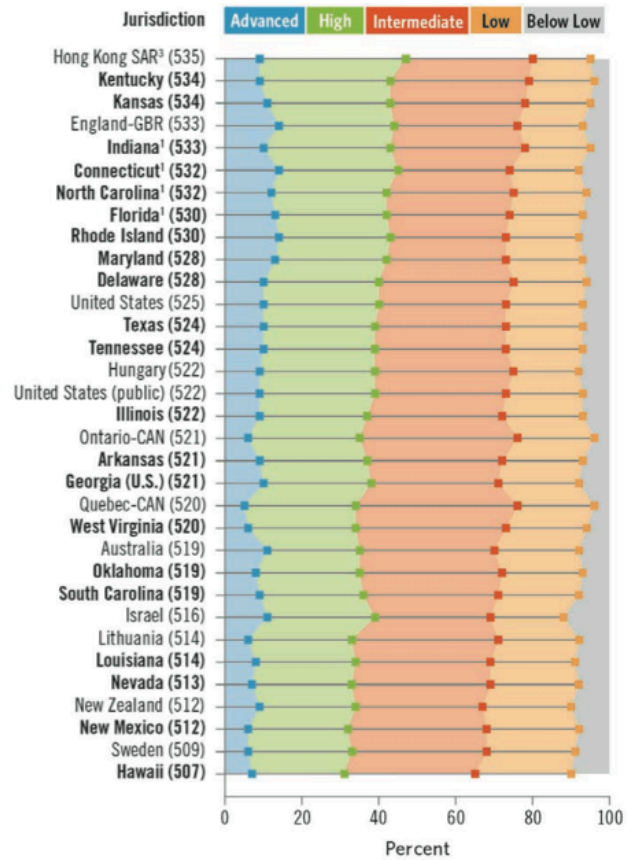
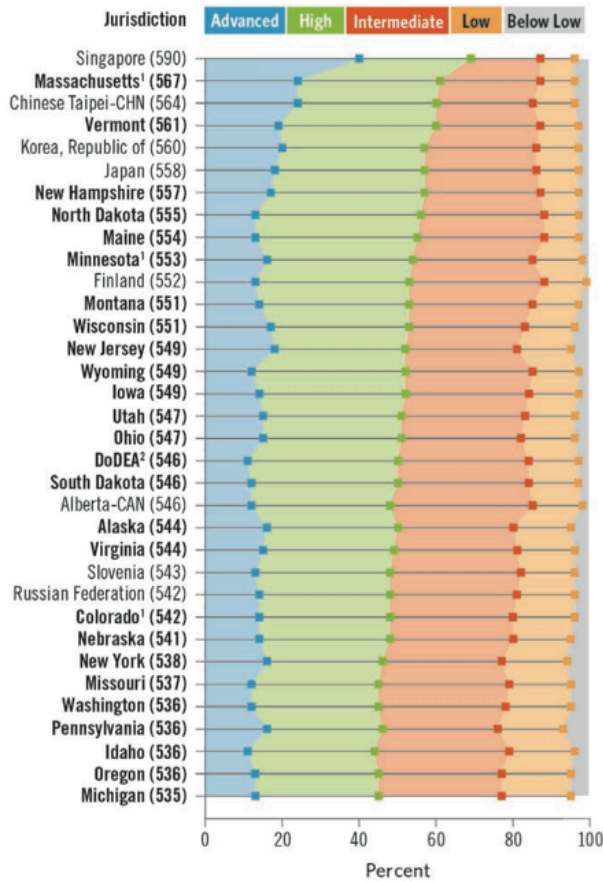
Benchmark-level results in TIMSS eighth-grade mathematics for students with average scores lower than the TIMSS average, by jurisdiction: 2011



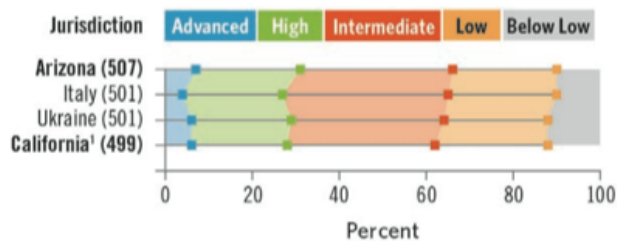
(Institute of Education Sciences, 2011)

Appendix G: TIMSS 8th Grade Science Report

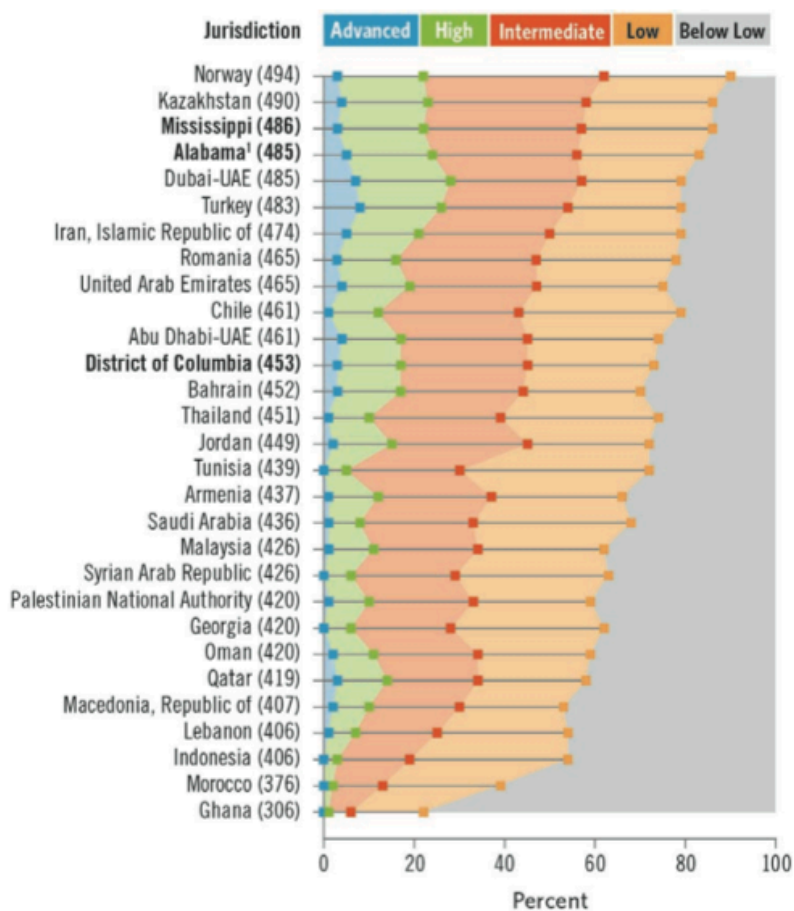
Benchmark-level results in TIMSS eighth-grade science for students with average scores higher than the TIMSS average, by jurisdiction: 2011



Benchmark-level results in TIMSS eighth-grade science for students with average scores not significantly different from the TIMSS average, by jurisdiction: 2011



Benchmark-level results in TIMSS eighth-grade science for students with average scores lower than the TIMSS average, by jurisdiction: 2011



(Institute of Education Sciences, 2011)

Appendix H: Principal Background Questionnaire

Directions: Please provide the following information related to your personal and academic experience. All responses will be kept confidential.

Q0 What is your school's LEA number (i.e. school code)?

Q1 What is your gender?

- ☐ Male (1)
- ☐ Female (2)

Q2 What is your current age?

Q3 Which of the following describe you? Check all that apply.

- ☐ Hispanic (1)
- ☐ American Indian or Alaska Native (2)
- ☐ Asian (3)
- ☐ Black or African American (4)
- ☐ Native Hawaiian or Other Pacific Islander (5)
- ☐ White (6)
- ☐ Other (Please specify) (7) _____

Q4 Where were you born?

- ☐ In the United States
- ☐ Outside the United States. Please specify:

Q5 Have you ever traveled outside of your country of birth?

- ☐ Yes (1)
- ☐ No (2)

Answer If Have you ever traveled outside of your country of birth Yes Is Selected

Q5a Please list up to 5 countries you have lived in or visited outside of your birth country and how long you spent there. Start with the countries where you have spent the most time.

	Name of Country (1)	Number of Days (2)
Country #1 (1)		
Country #2 (2)		
Country #3 (3)		
Country #4 (4)		
Country #5 (5)		

Q6 What languages do you speak fluently? .

	Language (1)
Primary (1)	
Secondary (2)	
Other 1 (3)	
Other 2 (4)	

Q7 Please indicate the number of years of experience you have in each of the following categories:

	Number of Years (1)
Years as a principal at your current school (1)	
Years as a principal or assistant principal (in total) (2)	
Total years as an educator (3)	

Q8 The Common Core State Standards state that all students should be prepared for a successful life in the 21st century. This includes teaching students to be globally-aware citizens. How do you see your role in this global awareness shift?

Q9 What, if anything, have you personally done to support global awareness in your school?

Q10 Please indicate if you would like to receive the results of this study:

- ☐ Yes (1)
- ☐ No (2)

Appendix I: GMS Scoring Key

Scoring:

- Range of scores 30-150
- Sum all responses
- Reverse score items: 4, 5, 9, 10, 16, 21, 25, 27, 29
- Higher scores indicate a higher level of global-mindedness

Items Reflecting Theoretical Dimensions:

- Responsibility: 2, 7, 12, 18, 23, 26, 30 (Range: 7 - 35)
- Cultural Pluralism: 1, 3, 8, 13, 14, 19, 24, 27 (Total: 8 - 40)
- Efficacy: 4, 9, 15, 20, 28 (Total: 5 - 25)
- Globalcentrism: 5, 10, 16, 21, 29 (Total: 5 - 25)
- Interconnectedness: 6, 11, 17, 22, 25 (Total: 5 - 25)

Cultural Pluralism: Q1 I generally find it stimulating to spend an evening with people from another country.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Responsibility: Q2 I feel an obligation to speak out when I see our government doing something I consider wrong.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Cultural Pluralism: Q3 The United States is enriched by the fact that it is comprised of many people from different cultures and countries.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Efficacy: Q4 Really, there is nothing I can do about the problems of the world. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Globalcentrism: Q5 The needs of the United States must continue to be our highest priority in negotiating with other countries. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Interconnectedness: Q6 I often think about the kind of world we are creating for future generations.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Responsibility: Q7 When I hear that thousands of people are starving in an African country, I feel very frustrated.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Cultural Pluralism: Q8 Americans can learn something of value from all different cultures.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Efficacy: Q9 Generally, an individual's actions are too small to have a significant effect on the ecosystem. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Globalcentrism: Q10 Americans should be permitted to pursue the standard of living they can afford if it has a slightly negative impact on the environment. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Interconnectedness: Q11 I think of myself, not only as a citizen of my country, but also as a citizen of the world.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Responsibility: Q12 When I see the condition some people in the world live under, I feel a responsibility to do something about it.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Cultural Pluralism: Q13 I enjoy trying to understand people's behavior in the context of their culture.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Cultural Pluralism: Q14 My opinions about national policies are based on how those policies might affect the rest of the world, as well as the United States.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Efficacy: Q15 It is very important to me to choose a career in which I can have a positive effect on the quality of life for future generations.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Globalcentrism: Q16 America's values are probably the best. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Interconnectedness: Q17 In the long run, Americans will probably benefit from the fact that the world is becoming more interconnected.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Responsibility: Q18 The fact that a flood can kill 50,000 in Bangladesh is very depressing to me.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Cultural Pluralism: Q19 It is important that American universities and colleges provide programs designed to promote understanding among students of different ethnic and cultural backgrounds.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Efficacy: Q20 I think my behavior can impact people in other countries.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Globalcentrism: Q21 The present distribution of the world's wealth and resources should be maintained because it promotes survival of the fittest. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Interconnectedness: Q22 I feel a strong kinship with the worldwide human family.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Responsibility: Q23 I feel very concerned about the lives of people who live in politically repressive regimes.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Cultural Pluralism: Q24 It is important that we educate people to understand the impact that current policies might have on future generations.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Interconnectedness: Q25 It is not really important to me to consider myself as a member of the global community. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Responsibility: Q26 I sometimes try to imagine how a person who is always hungry must feel.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Cultural Pluralism: Q27 I have very little in common with people in underdeveloped nations. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Efficacy: Q28 I am able to affect what happens on a global level by what I do in my own community.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Globalcentrism: Q29 I sometimes feel irritated with people from other countries because they don't understand how we do things here. **REVERSE SCORE**

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Responsibility: Q30 Americans have a moral obligation to share their wealth with the less fortunate people of the world.

- ☐ Strongly Disagree (1)
- ☐ Disagree (2)
- ☐ Neither Agree nor Disagree (3)
- ☐ Agree (4)
- ☐ Strongly Agree (5)

Appendix J: GMS Permission

From: Dallas Boggs (boggs@sandiego.edu)
Sent: Wed 7/23/14 5:40 PM
To: Betsy Sutherland (betsysutherland@hotmail.com)

Dear Betsy, You have my full permission to use Jane Hett's Global Mindedness Scale. Jane would be delighted to know that it continue to be put to good use. Dallas Boggs

From: Betsy Sutherland [betsysutherland@hotmail.com]
Sent: Tuesday, July 22, 2014 6:09 PM
To: Dallas Boggs
Subject: Hett's Global Mindedness Scale Usage Request

Hello Dr. Boggs,

I would like to request permission from you to use E. Jane Hett's global mindedness scale that was developed in 1993. I am looking to use it for my own doctoral research as part of my studies at UNC Chapel Hill. It is my understanding that you hold the copyright for this tool. If you would, please let me know how I may obtain this permission.

Thank you very much,

Betsy Sutherland
843-991-4131
betsysutherland@hotmail.com

Appendix K: Understanding the ACT Scores

Understanding Your Scores

Find your...

Composite Score **XX**

out of 36 possible points

ENGLISH **XX**
+
MATHEMATICS **XX**
+
READING **XX**
+
SCIENCE **XX**

divided by 4

We counted your correct answers on each test. We didn't take points off for wrong answers. Then, for each test, we converted your number of correct answers into a score that ranges from 1 to 36. Your COMPOSITE score is the average of your four test scores, rounded to the nearest whole number. If you left any test completely blank, that score is reported as a dash and no Composite score is computed.

How You Compare to Other Students

Your ranks tell you the percentage of recent high school graduates who received a score that is the same as or lower than yours. For example, a rank of 55 for your Composite score means 55% of students earned that Composite score or below.

Understanding Your Writing Scores

Two trained readers scored your essay on a scale of 1–6. Those scores were added together for your Writing score. A Writing score of 7 or higher suggests you can handle college-level writing assignments. Your Combined score is calculated from your English score and Writing score. You can find information about this at www.actstudent.org/writing.

A NOTE ABOUT TEST SCORES

No test can be absolutely precise, so think of your scores as a range rather than a single value. For Composite scores, that range would be plus or minus one point. For test scores, it would be plus or minus two points.

(American College Testing Inc., 2014)

References

- Acolatse, R. T. (2010). *Global mindedness and dispositions towards diversity in the classroom (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (UMI No. 3420352).
- Agunloye, O. O., & Sielke, C. C. (2007). A multivariate analysis of educational productivity in urban Georgia high schools. *Georgia Educational Researcher*, 5, 1-19.
- AIIESEC. (2013). *Change the world by changing yourself*. Retrieved November 19, 2013, from Global Citizen: <http://aiesec.org/students/volunteer-abroad/>
- Alliance for Excellent Education (2015). International Comparisons. Retrieved April 5, 2015, from <http://all4ed.org/issues/international-comparisons/>
- American College Testing Inc. (2014). *The ACT*. Retrieved August 17, 2014, from <http://www.actstudent.org>
- American Council on Education. (n.d.). *Internationalization in action*. Retrieved August 1, 2014, from ACE Leadership and Advocacy: <http://www.acenet.edu/news-room/Pages/Internationalization-in-Action.aspx>
- Anderson, C. (1982). The search for school climate: A review of the research. *Review of Educational Research*, 52, 368–420.
- Armor, D. J. (2003). *Maximizing intelligence*. Edison, NJ: Transaction.
- Arnold, M. (2004). *Guiding rural schools and districts: A research agenda*. Aurora, CO: Mid-continent Research for Education and Learning.
- Arnold, M. L. (2000). *Rural schools: Diverse needs call for flexible policies. [Policy Brief]*. Aurora, CO: Midcontinent Research for Education and Learning.
- Asia Society. (2013, November). *Measuring 21st century competencies: Guidance for educators*. Retrieved October 3, 2014, from Global Cities Education Network: <http://asiasociety.org/files/gcen-measuring21skills.pdf>
- Aynsley, S., Brown, C., & Sebba, J. (2012). *Opening minds*. London, U.K.: RSA.
- Balfanz, R., & MacIver, D. (2000). Transforming high-poverty urban middle schools into strong learning instructions: Lessons from the first five year of the Talent Development Middle School. *Journal of Education for Students Placed at Risk*, 5(1), 137-158.
- Bancroft, K., Barker, R. G., & Gump, P. V. (1964). *Big school, small school: High school size and student behavior*. Palo Alto, CA: Stanford University Press.

- Barrows, T. S., Bennett, M. F., Braun, H. I., Clark, J. L., Harris, L. G., & Klein, S. F. (1981). *College students' knowledge and beliefs: A survey of global understanding the final report of the Global Understanding Project*. New Rochelle, NY: Change Magazine Press.
- Bass, B. M., & Avolio, B. (1993). Transformational leadership and organizational culture. *Public Administration Quarterly*, 17, 112-121.
- Baxter, L. A., & Babbie, E. R. (2004). *The basics of communication research*. New York, NY: Wadsworth/Thomson.
- Bays, D. A., & Crockett, J. B. (2007). Investigating instructional leadership for special education. *Exceptionality*, 15(3), 143-161.
- Béteille, T., Kalogrides, D., & Loeb, S. (2012, March 12). *Stepping stones: Principal career paths and school outcomes*. Retrieved March 5, 2015, from Social Science Research: <http://cepa.stanford.edu/sites/default/files/Principal%20Turnover%20Published%20Version.pdf>
- Begley, P. (2002). Western-centric perspectives on values and leadership. In A. Walker, & C. Dimmock (Eds.), *School leadership and administration: Adopting a cultural perspective* (pp. 45-59). New York, NY: Routledge Falmer.
- Bickel, R., & Howley, C. (2000). The influence of scale on student performance: A multi-level extension of the Matthew principle. *Educational Policy Analysis Archives*, 8(22), 1-33.
- Bisson, P., Stephenson, E., & Viguerie, S. P. (2010, June). *The global grid: The global economy is becoming increasingly interconnected, and innovative businesses are harnessing the power of this network*. Retrieved October 8, 2014, from McKinsey & Co.: http://www.mckinsey.com/insights/innovation/the_global_grid
- Books, S. (2009). *Poverty and schooling in the U.S.: Contexts and consequences*. New York, NY: Routledge.
- Borg, M. O., Plumlee, P., & Stranahan, H. A. (2007). Plenty of children left behind: High-stakes testing and graduation rates in Duval County, Florida. *Educational Policy*, 21, 695-716.
- Bottery, M. (2006). Educational leaders in a globalising world: A new set of priorities? *School Leadership & Management*, 26(1), 5-22.
- Bottery, M. (1999). Global forces, national mediations and the management of educational institutions. *Educational Management and Administration*, 27(3), 299-312.
- Bouffard, S. M., & Stephen, N. (2007). Promoting family involvement. *Principal's Research Review*, 2(6), 1-8.

- British Council. (2013). *DFID global school partnerships*. Retrieved November 20, 2013, from <http://www.britishcouncil.org/srilanka-projects-and-networking-gsl-dfid-global-schools-partnership.htm>
- Brown-Cecora, M. K. (2008). *A study of the income factor in the 2006 Kansas standard of excellence schools (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3341504).
- Bruggink, P. B. (2001). *Principal succession and school effectiveness: The relationship between the frequency of principal turnover in Florida public schools from 1990- 1991 to 1998-1999 and school performance indicators in 1998-1999. (Doctoral dissertation)*. Florida State University. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3028466).
- Bryan, A., & Vavrus, F. (2005). The promise and peril of education: The teaching of intolerance in an era of globalisation. *Globalisation, Societies and Education*, 3(2), 183-202.
- Burke Johnson, R., Onwuegbuzie, A., & Turner, L. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1(2), 112-133.
- Burney, V., & Beilke, J. (2008). The constraints of poverty on high achievement. *Journal for the Education of the Gifted*, 31, 295-321.
- Caldas, S. J., & Bankston, C. L. (1998). The inequality of separation: Racial composition of schools and academic achievement. *Educational Administration*, 34, 533-557.
- Cambridge, J., & Thompson, J. (2004). Internationalism and globalization as contexts for international education. *Compare*, 34(2), 161-175.
- Carano, K. T. (2010). *Through the lens of a global educator: Examining personal perceptions regarding the construction of world-mindedness (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3432704).
- Cary, K. (2004). *The funding gap 2004: Many states still shortchange low-income and minority students*. Washington, D.C.: Education Trust.
- Cavanagh, S. (1997). Content analysis: Concepts, methods, and applications. *Nurse Researcher*, 4(3), 5-16.
- CCSSI. (2012). *Common Core State Standards Initiative*. Retrieved November 17, 2013, from <http://www.corestandards.org/>
- Central Intelligence Agency. (2013). *The world factbook*. Retrieved July 24, 2014, from <https://www.cia.gov/library/publications/the-world-factbook/index.html>

- China Buisness Review. (2011, April 1). *General Motors races ahead in the China market*. Retrieved October 8, 2014, from <http://www.chinabusinessreview.com/general-motors-races-ahead-in-the-china-market/>
- Clarke, V. (2004). Students' global awareness and attitudes to internationalism in a world of cultural convergence. *Journal of Research in International Education*, 3(1), 51-70.
- Clotfelter, C., Ladd, H., & Vigdor, J. (2007). High poverty schools and the distribution of teachers and principals. *North Carolina Law Review*, 85(5), 1345-1380.
- Cogan, J. J., & Grossman, D. L. (2009). Characteristics of global minded teachers: A twenty-first century view. In T. Kirkwood-Tucker (Ed.), *Visions in global education: The globalization of curriculum and pedagogy in teacher education and schools*. New York, NY: Peter Lang.
- Cohen, R., & Kennedy, P. (2000). *Global sociology*. New York, NY: New York University Press.
- Cole, F. L. (1988). Content analysis: Process and application. *Clinical Nurse Specialist*, 2(1), 53-57.
- Coleman, J. S. (1966). *Equality of educational opportunity*. Washington, D.C.: Government Printing Office.
- Coleman, J. S. (1990). Equality of educational opportunity. In *Equality and Achievement in Education* (pp. 75-120). Boulder: Westview Press.
- Coles, M., & Southworth, G. (2005). *Developing leadership: Creating the schools of tomorrow*. New York, NY: Open University Press.
- Coley, R. (2003). *Reading and literacy in America*. Princeton, NJ: Educational Testing Service.
- Collard, J., & Reynolds, C. (2005). *Leadership, gender and culture in education: Male and female perspectives*. New York, NY: Open University Press.
- Conant, J. B. (1967). *The comprehensive high school: A second report to interested citizens*. New York, NY: McGraw-Hill.
- Condrón, D. J., & Roscigno, V. J. (2003). Disparities within: Unequal spending and achievement in an urban school district: A magazine of theory and practice. *Sociology of Education*, 76(1), 18-36.
- Cooner, D., Tochtermann, S., & Garrison-Wade, D. (2004). *Preparing principals for leadership in special education: Applying ISLLC standards*. Retrieved June 22, 2014, from Journal of Principal Preparation and Development: <https://www.nassp.org/portals/0/content/49135.pdf>

- Copeland, M. A. (2001). The myth of the super principal. *Phi Delta Kappan*, 82, 528-533.
- Cotton, K. (1996). *Affective and social benefits of small-scale schooling*. Charleston, WV: Clearinghouse on Rural Education and Small Schools.
- Cotton, K. (2003). *Principals and student achievement: What the research says*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Crawford, J., & Lamb, J. C. (1982). Effect of worldmindedness among professional buyers upon their willingness to buy foreign products. *Psychological Reports*, 50, 859-862.
- Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles, CA: SAGE Publications, Inc.
- Creswell, J., & Plano Clark, V. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: SAGE Publications.
- Darling-Hammond, L. (2007). Race, inequality, and educational accountability: The irony of No Child Left Behind. *Race, Ethnicity and Education*, 10(3), 245-260.
- Darling-Hammond, L., & Adamson, F. (2010). *Beyond basic skills: The role of performance assessment in achieving 21st century standards of learning*. Retrieved March 2, 2015, from Stanford Center for Opportunity Policy in Education: <https://scale.stanford.edu/system/files/beyond-basic-skills-role-performance-assessment-achieving-21st-century-standards-learning.pdf>
- Darling-Hammond, L., Baron, B., Pearson, P. D., Schoenfeld, A. H., Stage, E. K., Zimmerman, T., et al. (2008). *Powerful learning: What we know about teaching for understanding*. San Francisco, CA: Jossey-Bass.
- Deal, T. E., & Peterson, K. D. (1994). *The leadership paradox: Balancing logic and artistry in schools (1st ed.)*. San Francisco, CA: Jossey-Bass Publishers.
- Deal, T., & Peterson, K. (1999). *Shaping school culture: The heart of leadership*. San Francisco, CA: Jossey-Bass.
- Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research (3rd ed.)*. Thousand Oaks, CA: SAGE Publications.
- Dimmock, C., & Walker, A. (2005). *Educational leadership: Culture and diversity*. Thousand Oaks, CA: SAGE Publications.
- Dokoupil, T. (2010). *Consolidation's failing grade in Indiana*. Retrieved October 3, 2014, from Newsweek: <http://www.highbeam.com/doc/1G1-240394163.html>

- Douglas, C., & Jones-Rikkens, C. (2001). Study abroad programs and American student worldmindedness: An empirical analysis. *Journal of Teaching in International Business*, 13, 55-66.
- Downe-Wamboldt, B. (1992). Content analysis: Methods, applications and issues. *Health Care for Women International*, 13(3), 313-321.
- Drukker, M., Feron, F., Mengelers, R., & Van Os, J. (2009). Neighborhood socioeconomic and social factors and school achievement in boys and girls. *Journal of Early Adolescence*, 29(2), 285-306.
- Duckworth, R., Walker-Levy, L., & Levy, J. (2005). Present and future teachers of the world's children: How internationally minded are they? *Journal of Research in International Education*, 4(3), 279-311.
- Duke, N. (2004). The case for information text. *Educational Leadership*, 61(6), 40.
- DuVall, H. (2001). Big-City schools: Struggling to be the best. *Principal*, 81(1), 6-8.
- Entwisle, D., Alexander, K., & Olson, L. (2007). Early schooling: The handicap of being poor and male. *Sociology of Education*, 80, 114-138.
- Escamilla, K., Mahon, E., Riley-Bernal, H., & Rutledge, D. (2003). High-stakes testing, Latinos, and English language learners: Lessons from Colorado. *Bilingual Research Journal*, 27, 25-49.
- Flanagan, A., & Grissmer, D. (2006). *Effect of teacher pay on student performance: Findings from Illinois*. Washington, D.C.: RAND Corporation.
- Florida, R. (2007). *The flight of the creative class: The new global competition for talent*. New York, NY: Harper Collins.
- Fogo, S. R. (2002). *School reform models and their effect on student reading achievement and principal succession. (Doctoral dissertation)*. Bowling Green State University. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3095329).
- Fowler, W. J., & Walberg, H. J. (1991). School size, characteristics, and outcomes. *Educational Evaluation and Policy Analysis*, 13, 189-202.
- Freeman, R. (2006). *The great doubling: The challenge of the new global labor market*. Retrieved June 13, 2014, from http://eml.berkeley.edu/~webfac/eichengreen/e183_sp07/great_doub.pdf
- Friedman, T. (2007). *The world is flat: A brief history of the twenty-first century (Release 3.0)*. New York, NY: Picador.

- Fryer, R., & Levitt, S. D. (2006). The Black-White test score gap through third grade. *American Law and Economics Review, Oxford University Press*, 8(2), 249-281.
- Fullan, M. G. (1993). Why teachers must become change agents. *Educational Leadership*, 50(6), 1-13.
- Garbarino, J. (1980). Some thoughts on school size and its effects on adolescent development. *Journal of Youth and Adolescence*, 9(1), 19-31.
- Gieselmann, S. R. (2004). *Predicting elementary school student achievement: The impact of principal gender and principal leadership skills. (Doctoral dissertation)*. University of Louisville. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3134183).
- Gillian, K. J. (1995). *A measure of global-mindedness at the University of Northern Colorado: An assessment of students, faculty and administrators. (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and These database. (UMI No: 9544361).
- Glesne, C. (2006). *Becoming qualitative researchers: An introduction (3rd ed.)*. Boston, MA: Pearson.
- Goldman Sachs. (2003, October 1). *GS economics*. Retrieved October 3, 2014, from Global Economics Paper No: 99: <http://www.goldmansachs.com/korea/ideas/brics/99-dreaming.pdf>
- Goodlad, J. I. (1984). *A place called school: Prospects for the future*. New York, NY: McGraw-Hill.
- Goodwin, R., Cunningham, M., & Eagle, T. (2005). The changing role of the secondary principal in the United States: An historical perspective. *Journal of Educational Administration and History*, 37(1), 1-17.
- Gordon, J., & Patterson, J. (2006). School leadership in context: Narratives of practice and possibility. *International Journal of Leadership in Education*, 9(3), 205-228.
- Gorski, P. (2008). The myth of the culture of poverty. *Educational Leadership*, 65(7), 32-26.
- Greene, G. K., Huerta, L. A., & Richards, C. (2007). Getting real: A different perspective on school resources and student outcomes. *Journal of Education Finance*, 33(1), 49-68.
- Greene, J., Benjamin, L., & Goodyear, L. (2001). The merits of mixing methods in evaluation. *Evaluation*, 7(1), 25-44.
- Gregory, T. B., & Smith, G. R. (1987). *High schools as communities: The small school reconsidered*. Bloomington, IN: Phi Delta Kappan Educational Foundation.

- Gruenert, S. (2005). Correlations of collaborative school cultures with student achievement. *NASSP Bulletin*, 89(645), 43-55.
- Gurian, M., & Stevens, K. (2005). *The minds of boys: Saving our sons from falling behind in school and life*. San Francisco, CA: Jossey-Bass.
- Hager, G. (2006). *School size and student outcomes in Kentucky's public schools. (Research Report No. 334)*. Frankfort, KY: Legislative Research Commission.
- Haile, G. A., & Nguyen, A. N. (2008). Determinants of academic attainment in the United States: A quantile regression analysis of test scores. *Education Economics*, 16, 29-57.
- Hallinger, P. (2005). Foreward. In A. Walker, & C. Dimmock (Eds.), *Educational leadership: Culture and diversity* (pp. vii-xii). London, UK: SAGE Publications.
- Hallinger, P., & Kantamara, P. (2000). Leading at the confluence of tradition and globalization: The challenge of change in Thai schools. *Asia Pacific Journal of Education*, 20(2), 46-57.
- Hanushek, E. A. (1986). The economics of schooling: Production and efficiency in public schools. *Journal of Economic Literature*, 24(3), 1141-1177.
- Hanvey, R. (1976). *An attainable global perspective*. New York, NY: Center for Global Perspectives.
- Haywood, T. (2002). An international dimension to management and leadership skills for international education. In M. Hayden, & J. Thompson (Eds.), *International education in practice* (pp. 170-184). London, UK: Kogan Press.
- Heck, R. (2002). Issues in the investigation of school leadership. In A. Walker, & C. Dimmock (Eds.), *School leadership and administration: Adopting a cultural perspective* (pp. 77-100). New York, NY: Routledge.
- Hett, E. J. (1993). *Development of an instrument to measure global-mindedness. (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (UMI No. 9408210).
- Houtenville, A. J., & Conway, K. S. (2008). Parental effort, school resources and student achievement. *Journal of Human Resources*, 43(2), 437-453.
- Howley, C., & Bickel, R. (1999). *The Matthew project: National report*. Randolph, VT: Rural Challenge.
- Howley, C., & Howley, A. (2004). School size and the influence of socioeconomic status on student achievement: Confronting the threat of size bias in national data sets. *Educational Policy Analysis Archives*, 12(52), 1-35.

- Howley, C., Johnson, J., & Petrie, J. (2011). *Consolidation of schools and districts: What the research says and what it means*. Boulder, CO: National Education Policy Center.
- Hsieh, H., & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- Ikpa, V. W. (2003). The mathematics and science achievement gap between resegregated and desegregated schools. *Education*, 124(2), 223-229.
- Illinois State Board of Education. (2011). *School business services division*. Retrieved October 3, 2014, from School district reorganizations: 1983-84 to 2011-12: http://www.isbe.state.il.us/sfms/pdf/reorg_history.pdf
- Imazeki, J., & Reschovsky, A. (2005). Assessing the use of econometric analysis in estimating the costs of meeting state education accountability standards: Lessons from Texas. *Peabody Journal of Education*, 80(3), 96-125.
- Ingersoll, R. M. (2005). The problem of underqualified teachers: A sociological perspective. *Sociology of Education*, 78, 175-178.
- Institute of Education Sciences. (2011). *National Center for Education Statistics*. Retrieved October 3, 2014, from Trends in International Mathematics and Science Study: <http://nces.ed.gov/timss/>
- Institute of Education Sciences. (2011). *Progress in International Reading Literacy Study*. Retrieved July 31, 2014, from PIRLS 2011 Results: <http://nces.ed.gov/surveys/pirls/pirls2011.asp>
- Institute of Educational Sciences. (2014). *Nations report card*. Retrieved October 3, 2014, from The National Assessment of Educational Progress: <http://nces.ed.gov/nationsreportcard/>
- International Society for Technology in Education. (2015). *ISTE standards*. Retrieved March 2, 2015, from ISTE: <http://www.iste.org/standards>
- Jackson, R. M. (2005). *Analysis of the relationship among principals' prior teaching experiences and tenure in their current positions to their schools' performance level rankings on the North Carolina accountability model (ABCS) over three years. (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database (UMI No: 3148753).
- Jencks, C., & Phillips, M. (1998). *The Black-White test score gap*. Washington, D.C.: Brookings Institution Press.
- Jonassen, D., Howland, J., Marra, R. M., & Crismond, D. (2008). *Meaningful learning with technology*. Upper Saddle Creek, NJ: Pearson.

- Jootun, D., McGhee, G., & Marland, G. R. (2009). Reflexivity: Promoting rigour in qualitative research. *Nursing Standard*, 23(23), 42-46.
- Kafka, J. (2009). The principalship in historical perspective. *Peabody Journal of Education*, 84, 318-330.
- Kagan, S. L., & Stewart, V. (2004). International education in the schools: The state of the field. *Phi Delta Kappan*, 86(3), 229-235.
- Karhuse, A. (2007). Beyond NCLB: A sledgehammer approach to complex issues. *News Leader*, 54(8), p. 1.
- Karoly, L., & Panis, C. (2004). *The 21st century at work*. Retrieved October 7, 2014, from RAND Corporation: http://rand.org/pubs/monographs/2004/RAND_MG164.pdf
- Kearney, K. (2005). Guiding improvements in principal performance. *Leadership*, 35(1), 19-21.
- Kehl, K., & Morris, J. (2008). Differences in global-mindedness between short-term and semester-long study abroad participants at selected private universities. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 15(2007), 67-79.
- Kennedy, A. (2005). Models of professional development: a framework for analysis. *Journal of In-service Education*, 31(2), 235-250.
- Kenny, L. W., & Schmidt, A. B. (1994). The decline in the number of school districts in the United States: 1950-1980. *Public Choice*, 70(1), 1-18.
- Kiplinger. (2011). *10 Jobs That Didn't Exist Ten Years Ago*. Retrieved June 29, 2014, from <http://www.kiplinger.com/slideshow/business/T012-S001-10-jobs-that-didn-t-exist-ten-years-ago/>
- Kirkwood-Tucker, T., Morris, J., & Lieberman, N. (2011). What kind of teachers will teach our children? The world-mindedness of undergraduate elementary and secondary social studies teacher candidates at five Florida public universities. *International Journal of Development Education and Global Learning*, 3(3), 5-28.
- Kleinbaum, D. G., Muller, K., Kupper, L., & Nizam, A. (1997). *Applied regression analysis and multivariable methods*. Belmont, CA: Thomson Brooks/Cole Publishing Co.
- Kozol, J. (1991). *Savage inequalities*. New York, NY: Crown.
- Lamy, S. L. (1983). Defining global education. *Educational Research Quarterly*, 8(1), 9-19.
- Langenfeld, J., & Nieberding, J. (2005). The benefits of free trade to U.S. consumers: Quantitative confirmation of theoretical expectation. *Business Economics*, 40(3), 41-51.

- Lankford, H., Loeb, S., & Wyckoff, J. (2002). Teacher sorting and the plight of urban schools: A descriptive analysis. *Educational Evaluation and Policy Analysis*, 24(1), 37-62.
- Lareau, A. (2003). *Unequal childhoods: class, race, and family life*. Berkeley, CA: University of California Press.
- Larson, C., & Murtadha, K. (2002). *In the educational leadership challenge: Redefining leadership for the 21st century*. Chicago, IL: University of Chicago Press.
- Lashley, C. (2007). Principal leadership for special education: An ethical framework. *Exceptionality*, 15(3), 177-187.
- Lashway, L. (2002). *Developing instructional leaders*. Retrieved June 24, 2014, from ERIC Clearinghouse on Educational Management: <http://www.gpo.gov/fdsys/pkg/ERIC-ED466023/pdf/ERIC-ED466023.pdf>
- Lashway, L. (2003). Principal induction. *Clearinghouse on Educational Policy and Management—Research Roundup*, 20(2).
- Leandro v. State, 488 (S.E.2d 249 1997).
- Lee, V. E., & Smith, J. B. (2005). High school size: Which works best, and for whom? *Educational Evaluation and Policy Analysis*, 19(3), 205-227.
- Leech, N. L., & Onwuegbuzie, A. J. (2008). Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond. *School Psychology Quarterly*, 23(4), 587-604.
- Leithwood, K. A., & Riehl, C. (2003). *What we know about successful school leadership*. Philadelphia, PA: Laboratory for Student Success, Temple University.
- Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning: Review of research*. New York, NY: The Wallace Foundation.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. New York, NY: SAGE Publications.
- Loeb, S., Bryk, A., & Hanushek, E. (2007). *Getting down to facts: School governance and finance in California*. Palo Alto, CA: Stanford University.
- Loutzenheiser, L. W., & MacIntosh, L. B. (2004). Citizenships, sexualities, and education. *Theory into Practice*, 43(2), 151-158.
- MacBeath, J. E., & Dempster, N. (2009). *Connecting leadership and learning: Principles for practice*. London, UK: Routledge.

- Machtinger, H. (2007). What do we know about high poverty schools? Summary of the high poverty schools conference at UNC-Chapel Hill. *High School Journal*, 90(3), 1-8.
- Macmillan, R. B., & Meyer, M. J. (2003). *Principal turnover and its impact on teachers' work: A preliminary study*. Chicago, IL.: Paper presented at the annual meeting of the American Education Research Association, Chicago, IL.
- MacNeil, A. J., Prater, D. L., & Busch, S. (2009). The effects of school culture and climate on student achievement. *International Journal of Leadership in Education*, 12(1), 73-84.
- Mansilla, V., & Jackson, A. (2011). *Educating for global competitiveness: Preparing youth to engage the world*. Retrieved June 26, 2014, from Asia Society Partnership for Global Learning: <http://asiasociety.org>
- Mapp, S. C., McFarland, P., & Newell, E. A. (2007). The effect of a short-term study abroad class on students' cross-cultural awareness. *The Journal of Baccalaureate Social Work*, 13(1), 39-51.
- Marks, H. M., & Printy, S. M. (2003). Principal leadership and school performance: An integration of transformational and instructional leadership. *Educational Administration Quarterly*, 39(3), 370-397.
- Marshall, C. (1993). *The assistant principal – leadership choices and challenges*. Newbury Park, CA: Corwin Press.
- Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School leadership that works: From research to results*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Matthews, J., Kizzie, K., Rowley, S., & Cortina, K. (2010). African Americans and boys: Understanding the literacy gap, tracing academic trajectories, and evaluating the role of learning-related skills. *Journal of Educational Psychology*, 102, 757-771.
- Maulding, W. S., Townsend, A., Leonard, E., Sparkman, L., Styron, J., & Styron, A. J. (2010). The relationship between emotional intelligence of principals and student performance in Mississippi public schools. *Academic Leadership Journal*, 8(4), 419-423.
- McFadden, C., Maahs-Fladung, C., Becc-Frazier, S., & Bruckner, K. (2009). Perceptions of leadership behaviors by female principals in North Carolina. *Journal of Women in Educational Leadership*, 7(3), 115-133.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook (2nd ed.)*. Thousand Oaks, CA: SAGE Publications.
- Miller, A. (2009). *Principal turnover, student achievement and teacher retention*. Princeton, NJ: Princeton University.

- Miskel, C., & Cosgrove, D. (1984). *Leader succession: A model and review for school settings*. New Orleans, LA: Paper presented at the annual meeting of the American Educational Research Association.
- Moore, B. (2009). Emotional intelligence for school administrators: A priority for school reform? *American Secondary Education*, 37(3), 20-29.
- Morris, M. L., & Lo, P. (2000). Shaping the curriculum: Contexts and cultures. *School Leadership & Management*, 20(2), 175-188.
- Morse, J. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40, 120-123.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: SAGE Publications.
- Nam, B., & Park, D. (2014). Parent involvement: Perceptions of recent immigrant parents in a suburban school district in Minnesota. *Educational Studies*, 40(3), 310-329.
- National Assessment of Educational Progress. (2013). *Nation's report card*. Retrieved October 8, 2014, from <http://nces.ed.gov/nationsreportcard/>
- National Center for Education Statistics. (n.d.). *Rural education in America: Prior urban/rural classification systems*. Retrieved October 3, 2014, from <http://nces.ed.gov/surveys/ruraled/definitions.asp>
- National Council of Educational Research and Training. (2013). Retrieved December 4, 2013, from National Curriculum Framework 2005: http://www.ncert.nic.in/rightside/links/nc_framework.html
- National Geographic Society (NGS). (2006). *Roper Public Affairs survey*. Retrieved December 18, 2013, from Roper Survey of Geographic Literacy: <http://www.nationalgeographic.com/roper2006/>
- National Governors Association, the Council of Chief State School Officers, and Achieve, Inc. (2008). *Benchmarking for success: Ensuring U.S. students receive a world-class education*. Washington, D.C.: National Governors Association.
- National Science Board. (2014, February). *Science and engineering indicators*. Retrieved October 7, 2014, from <http://www.nsf.gov/statistics/seind14/>
- Nettles, S., & Herrington, C. (2007). Revisiting the importance of the direct effects of school leadership on student achievement: The implications for school improvement policy. *Peabody Journal of Education*, 82(4), 724-736.

- Neuman, S., & Celano, D. (2001). Access to print in low-income and middle-income communities: An ecological study of four neighborhoods. *Reading Research Quarterly*, 36(1), 8-26.
- Newmann, F. M., King, M. B., & Youngs, P. (2000). Professional development that addresses school capacity: Lessons from urban elementary schools. *American Journal of Education*, 108(4), 250-299.
- Nicholson, E., & Tracy, S. (2001). Principal's influence on teacher's attitude and implementation of curricular change. *Education*, 103(1), 68-73.
- Noble, J., Roberts, W. L., & Sawyer, R. L. (2006, October). *Student achievement, behavior, perceptions, and other factors affecting ACT scores*. Retrieved March 5, 2015, from ACT Research Report Series:
http://www.act.org/research/researchers/reports/pdf/ACT_RR2006-1.pdf
- Noguera, P. A. (2002). Beyond size: The challenge of high school reform. *Educational Leadership*, 59, 60-64.
- North Carolina Department of Instruction. (2006, December 7). Retrieved June 24, 2014, from North Carolina Standards for School Executives: <http://www.dpi.state.nc.us/docs/district-humanresources/evaluation/standardsadmin.pdf>
- North Carolina Department of Public Instruction. (2013). Retrieved October 3, 2014, from Public Schools of North Carolina: <http://www.ncpublicschools.org>
- North Carolina Department of Public Instruction. (2013, August 29). *North Carolina - comparing graduation rates by district, 2006-2013*. Retrieved March 5, 2015, from Analyze North Carolina high school graduation trends:
<http://ui.uncc.edu/display/compare-nc-graduation-rates-line-graph-interactive>
- North Carolina Department of Public Instruction. (2014). *State/LEA and school test performance*. Retrieved October 14, 2014, from Public Schools of North Carolina: <http://www.ncpublicschools.org/accountability/reporting/leaperformancearchive/>
- North Carolina Justice Center. (2010, January 15). *Exposing the gap: Revisited*. Retrieved March 5, 2015, from
<http://www.ncjustice.org/sites/default/files/2010%20Achievement%20Gap%20report.pdf>
- North Carolina State Board of Education. (2008). *Future ready students for the 21st century*. Retrieved July 24, 2014, from
<http://www.ncpublicschools.org/docs/positivebehavior/resources/workshop/d7handout-goals.pdf>

- North Carolina State Department of Education. (2013). *North Carolina professional teaching standards*. Retrieved June 24, 2014, from <http://www.ncpublicschools.org/docs/educatoreffect/ncees/standards/prof-teach-standards.pdf>
- Organization for Economic Cooperation and Development. (2011). *Education at a glance 2011: OECD indicators*. Retrieved August 4, 2014, from <http://www.oecd.org/edu/skills-beyond-school/educationataglance2011oecdindicators.htm>
- Organization for Economic Cooperation and Development. (2005, May 27). *The definition and selection of key competencies: Executive summary*. Retrieved October 3, 2014, from <http://www.oecd.org/pisa/35070367.pdf>
- Papa, F. J., Lankford, H., & Wyckoff, J. (2002). *The attributes and career paths of principals: Implications for improving policy*. Albany, NY: University of Albany, SUNY.
- Parrett, W., & Budge, K. (2012). *Turning high-poverty schools into high-performing schools*. Alexandria, VA: ASCD.
- Partnership for 21st Century Skills. (2011). *Framework for 21st century learning*. Retrieved October 30, 2013, from http://www.p21.org/storage/documents/1.__p21_framework_2-pager.pdf
- Pence, H. M., & Macgillivray, I. K. (2008). The impact of an international field experience on preservice teachers. *Teaching and Teacher Education*, 24(1), 14-25.
- Phelps, S. D. (2000). *Sustaining successful student achievement under changing leadership. (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3004198).
- Pink, D. (2005). *A whole new mind: Why right-brainers will rule the future*. New York, NY: Riverhead Hardcover.
- Planty, M., Hussar, W., Snyder, T., Provasnik, S., Kena, G., KewalRamani, A., et al. (2008). *The Condition of education 2008 (NCES Publication No. 2008-031)*. National Center for Education Statistics, Institute of Education Sciences. Washington, D.C.: U.S. Department of Education.
- Praisner, C. L. (2003). Attitudes of elementary school principals toward the inclusion of students with disabilities. *Exceptional Children*, 69(2), 135-145.
- Pribesh, S. L. (2005). *The consequences of residential and school mobility for adolescents (Doctoral dissertation)*. Retrieved from ProQuest Dissertation and Theses database. (UMI No: 3161120).

- Program for International Student Assessment. (2012). *PISA key findings*. Retrieved October 30, 2013, from Programme for International Student Assessment: <http://www.oecd.org/pisa/keyfindings/PISA-2012-results-snapshot-Volume-I-ENG.pdf>
- Purdy, D. H. (1997). An economical, thorough, and efficient school system: The West Virginia school building authority “economy of scale” numbers. *Journal of Research in Rural Education*, 13(3), 170-182.
- Reardon, S. F. (2011). The widening academic gap between the rich and the poor: New evidence and possible explanations. In whither opportunity? In R. Mumane, & G. Duncan (Eds.), *Rising inequality, schools, and children’s life changes*. New York, NY: Russell Sage Foundation.
- Reardon, S. F., & Bischoff, K. (2011). Income inequality and income segregation. *American Journal of Sociology*, 116, 1092-1153.
- Rebell, M. (2007). Poverty, “meaningful” educational opportunity, and the necessary role of the courts. *North Carolina Law Review*, 85, 1468-1544.
- Reeves, D. (2004). Evaluating administrators. *Educational Leadership*, 61(7), 52-28.
- Riordan, K. (2003). *Increasing cultural competence*. Duluth, MN: Edison Charter School In-service.
- Robinson, V., Lloyd, C., & Rowe, K. (2008). The impact of leadership on student outcomes: An analysis of differential effects of leadership types. *Educational Administration Quarterly*, 44(5), 635-639.
- Roscigno, V. J., Tomaskovic-Devey, D., & Crowley, M. (2006). Education and the inequalities of place. *Social Forces*, 84(4), 2121-2145.
- Rotberg, I. (2008). *Quick fixes, test scores, and the global economy*. Retrieved October 3, 2014, from Education Week: http://www.edweek.org/ew/articles/2008/06/11/41rotberg_ep.h27.html
- Rousmaniere, K. (2007). Go to the principal’s office: Toward a social history of the school building principal in North America. *History of Education Quarterly*, 47, 1-22.
- Rowan, B., & Denk, C. (1984). Management succession, school socioeconomic context, and basic skills achievement. *American Educational Research Journal*, 21(3), 517-537.
- Royal Society for the Encouragement of Arts. (2014). Retrieved October 8, 2014, from RSA: 21st Century Enlightenment: <http://www.thersa.org>
- Rueben, K., & Murray, S. (2008). *Racial disparities in education finance: Going beyond equal revenues*. Washington, D.C.: Urban Institute Tax Policy Center.

- Rumberger, R. W. (2007). Parsing the data on student achievement in high poverty schools. *North Carolina Law Review*, 85, 1293-1314.
- Rumberger, R. W., & Palardy, G. J. (2005). Does segregation still matter? The impact of student composition on academic achievement in high school. *Teachers College Record*, 107(9), 1999-2045.
- Ryabov, I., & VanHook, J. (2007). School segregation and academic achievement among Hispanic children. *Social Science Research*, 36, 767-788.
- Saenz, L. P., & Moses, M. S. (2010). Deliberating about affirmative action: Linking education policy research and the media. *American Journal of Education*, 116(2), 263-287.
- Saldana, J. (2009). *The coding manual for qualitative researchers*. Thousand Oaks, CA: SAGE Publications.
- Sampson, D., & Smith, H. C. (1957). A scale to measure world-minded attitudes. *Journal of Social Psychology*, 45, 99-106.
- Sanchez, K. S., Bledsoe, L. M., Sumabat, C., & Ye, R. (2004). Hispanic students' reading situations and problems. *Journal of Hispanic Higher Education*, 3, 50-63.
- Schell, B., Sherritt, H., Lewis, M., & Mansfield, P. (1986). An investigation of worldmindedness, satisfaction, and commitment for hirers of foreign student exchanges. *Psychological Reports*, 59, 911-920.
- Seashore-Louis, K., Wahlstrom, K. L., Leithwood, K., & Anderson, S. E. (2010). *Investigating the links to improved student learning*. Retrieved July 23, 2014, from The Wallace Foundation: <http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Pages/Investigating-the-Links-to-Improved-Student-Learning.aspx>
- Sergiovanni, T. (2001). *The principalship: A reflective practice perspective*. Boston, MA: Allyn & Bacon.
- Shenton, A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75.
- Sherman, R., & Webb, R. (1995). Qualitative research in education: A focus. In R. R. Sherman, & R. B. Webb (Eds.), *Qualitative research in education- focus and methods* (pp. 2-21). Philadelphia, PA: The Falmer Press.
- Silova, I., & Brehm, W. C. (2009). Education and geopolitics in a changing Europe: Forty years of scholarship in European education. *European Education*, 41(2), 7-30.

- Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of the research. *Review of Educational Research*, 75(3), 417-453.
- Sizer, T. (1992). *Horace's school: Redesign of the American high school*. Boston, MA: Houghton Mifflin.
- Slavin, R. E. (1999). How can funding equity ensure enhanced achievement? *Journal of Education Finance*, 24, 519-528.
- Smith, D. (2008). *The impact of international experience on the global mindedness of extension agents employed by the North Carolina Cooperative Extension Service. (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3329339).
- State Board of Education Department of Public Instruction. (2013). *North Carolina teacher evaluation process*. Retrieved June 22, 2014, from National Council on Teacher Quality: http://www.nctq.org/docs/NC_teacher-eval_process.pdf
- Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation*, 7(11), 1.
- Stephens, T., & Hermond, D. (2009). The level of emotional intelligence in principals of recognized and acceptable schools. *Academic Leadership*, 7(3).
- Stewart, V. (2007). Becoming citizens of the world. *Educational Leadership*, 64(7), 8-14.
- Stiefel, L., Schwartz, A. E., & Ellen, I. G. (2006). Disentangling the racial test score gap: Probing the evidence in a large urban school district. *Journal of School Leadership*, 26, 7-30.
- Suarez-Orozco, M., & Sattin, C. (2007). Wanted: Global citizens. *Educational Leadership*, 64(7), 58-62.
- Sullivan-Bolyai, S., Bova, C., & Harper, D. (2005). Defining and refining interventions in persons with health disparities: The use of qualitative description. *Nursing Outlook*, 53(3), 127-133.
- Tate, W. F. (1997). *Race, ses, gender, and language proficiency trends in mathematics achievement*. Madison, WI: National Institute for Science Education.
- The Council of Chief State School Officers. (2008). *ISLLC*. Retrieved March 2, 2015, from Educational Leadership Policy Standards:: http://www.ccsso.org/Resources/Publications/Educational_Leadership_Policy_Standards_ISLLC_2008_as_Adopted_by_the_National_Policy_Board_for_Educational_Administrati on.html

- The Financial Times. (2011, October 17). *Skills shortage threatens US manufacturers*. Retrieved October 8, 2014, from U.S. Economy: <http://www.ft.com/intl/cms/s/0/d3635d46-f8e5-11e0-a5f7-00144feab49a.html#axzz3FkNuseUU>
- The Levin Institute. (2005). *The evolving global talent pool: Lessons from the BRIC countries*. New York, NY: The Levin Institute.
- The Maastricht Global Education Declaration. (2002). *Declaration European strategy framework for improving and increasing global education in Europe to the year 2015*. Retrieved November 4, 2013, from Global Education Without Borders: <http://www.glob-edu.net/materials/maastricht-global-education-declaration/>
- The Metiri Group and NCREL. (2003). *enGauge 21st century skills: Literacy in the digital age*. Retrieved October 3, 2014, from <http://pict.sdsu.edu/engauge21st.pdf>
- Thomas, M. D., & Bainbridge, W. L. (2001). All children can learn: Fact and fallacies. *Phi Delta Kappan*, 82(9), 660-662.
- Thompson, J. J. (1998). Towards a model for international education. In M. Hayden, & J. Thompson (Eds.), *International education, principles and practice* (pp. 276-290). London, UK: Kogan Page.
- Toffler, A. (1970). *Future shock*. New York, NY: Random House.
- Torney-Purta, J. (1982). The global awareness survey: Implications for teacher education. *Theory into Practice*, 21(3), 200-205.
- Tucker, J. L. (1982). Developing a global dimension in teacher education: The Florida International University experience. *Theory Into Practice*, 21, 212-217.
- Tye, B., & Tye, K. (1992). *Global education: A study of school change*. Albany, NY: State University of New York Press.
- U.S. Census Bureau. (2012). Retrieved October 3, 2014, from Census Bureau Statistics: <http://www.census.gov/en.html>
- United States Department of Labor. (2013, December 19). *Employment projections*. Retrieved October 9, 2014, from Bureau of Labor Statistics: <http://www.bls.gov/news.release/ecopro.nr0.htm>
- Usdan, M., McCloud, B., & Podmostko, M. (2000). *Leadership for student learning: Reinventing the principalship*. Retrieved July 24, 2014, from Institute for Educational Leadership: <http://www.iel.org/programs/21st/reports/principal.pdf>

- Verstegen, D., Venegas, K., & Knoepfel, R. (2006). Savage inequalities revisited: Adequacy, equity and state court decisions. *Educational Studies*, 40(1), 60-76.
- Viadero, D. (2005, January 25). *Mixed methods research examined*. Retrieved October 14, 2014, from Education Week:
<http://www.edweek.org/ew/articles/2005/01/26/20mixed.h24.html>
- Villa, R., & Thousand, J. (2005). *Creating an inclusive school*. Retrieved June 24, 2014, from Association for Supervision and Curriculum Development:
<http://www.ibo.org/facts/schoolstats/progsbycountry.cfm>
- VonSchnase, K. T. (2011). *How rural school superintendents in Illinois impact student achievement. (Doctoral dissertation)*. Retrieved from ProQuest Dissertations and Theses database. (UMI No: 3427256).
- Wagner, T. (2008). *The global achievement gap: Why even our best schools don't teach the new survival skills our children need--and what we can do about it*. New York, NY: Basic Books.
- Waks, L. J. (2006). Globalization, state transformation, and educational re-structuring: Why postmodern diversity will prevail over standardization. *Studies in Philosophy and Education*, 25(5), 403-425.
- Walker, G. (2008). IB and the wider world. *IB World Magazine* (52), pp. 12-13.
- Walton, J. R. (2002). Global-mindedness and classroom communication competency: Teachers in multicultural classrooms. *Journal of Research on Minority Affairs*, 11(1), 50-81.
- Warrell, M. (2013, April 22). *Why getting comfortable with discomfort is crucial to success*. Retrieved March 2, 2015, from Forbes:
<http://www.forbes.com/sites/margiewarrell/2013/04/22/is-comfort-holding-you-back/>
- Waters, T., Marzano, R. J., & McNulty, B. (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.
- Weber, R. P. (1990). *Basic content analysis*. Beverly Hills, CA: SAGE Publications.
- Weiss, C. C., Carolan, B. V., & Baker-Smith, E. C. (2010). Big school, small school: (Re)testing assumptions about high school size, school engagement, and mathematics achievement. *Journal of Youth and Adolescence*, 39(2), 163-176.
- Welsh, M., Parke, R. D., Widaman, K., & O'Neil, R. (2001). Linkages between children's social and academic competence: A longitudinal analysis. *Journal of School Psychology*, 39(6), 463-482.

- Williams, D. T. (1990). *The dimensions of education: Recent research on school size. (Working Paper Series)*. Clemson, SC: Clemson University, Strom Thurmond Institute of Government and Public Affairs.
- Williams, E., & Morrow, S. (2009). Achieving trustworthiness in qualitative research: A pan-paradigmatic perspective. *Psychotherapy Research*, 19(4), 576-582.
- Witziers, B., Bosker, R. J., & Kruger, M. L. (2003). Education leadership and student achievement: The illusive search for an association. *Educational Administration Quarterly*, 39, 398-425.
- Wonacott, M. E. (2002). *Gold-Collar workers*. Columbus, OH: ERIC Clearinghouse on Adult Career and Vocational Education.
- Wyse, A. E., Keesler, V., & Schneider, B. (2008). Assessing the effects of small school size on mathematics achievement: A propensity score-matching approach. *Teachers College Record*, 110, 1879-1900.
- Yachimowicz, D. J. (1987). *The effects of study abroad during college on international understanding and attitudes towards the homeland and other cultures. (Doctoral dissertation)*. Available from ProQuest Dissertations and Theses database (UMI No: 8729415).
- Ylimaki, R. (2007). Instructional leadership in challenging US schools. *International Studies in Educational Administration*, 35, 11-19.
- Zepeda, S. J. (2007). *Instructional supervision: Applying tools and concepts. Second Edition*. Larchmont, NY: Eye On Education.
- Zhai, L., & Scheer, S. (2004). Global perspectives and attitudes toward cultural diversity among summer agriculture students at the Ohio State University. *Journal of Agricultural Education*, 45(2), 39-51.
- Zong, G., & Farouk, M. (1999). *The effects of participation in an internet- based project on the development of preservice social studies teachers' global knowledge and global mindedness*. Orlando, FL: Paper presented at the 79th NCSS Annual Conference.