TEACHING IN THE 21st CENTURY

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ABSTRACT

Due to increased pressures of the twenty-first century industry, America's schools and their curriculum and accountability systems, must reflect those skills essential for success. Through the development of 21st century standards for teachers and students, many schools have begun the reform process to initiate change towards addressing these new skills. Some teachers have been effectively able to elicit change in their classroom instruction, though others have not. This study examines the characteristics of those teachers who are currently adopting the *Framework for 21st Century Skills* and attempts to understand the personal and professional barriers for those who are not adopting. The setting of this mixed-method study was conducted in one Southeast North Carolina elementary school. The initial survey identified survey participants who both philosophically believed in the 21st century teaching reform and also included 21st century classroom practices in their instruction. This study analyzed the data to identify those characteristics of adopting teachers and also identified six reoccurring themes as obstacles in implementation. Results of the study indicate many, if not all, participants believe in the reform change, though only some are putting these standards into practice in their classroom. Obstacles evaluated included lack of understanding and basic skills, lack of resources and time, pressure with high-stakes testing, and lack of parent, student, and teacher buy-in and support.

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CHAPTER 1. INTRODUCTION

> "Our 20th-century education system was built on an industrial model fit for an industrial economy. The expectation was that the bulk of our workforce would go into jobs that required only a high school diploma – or even less. We now live in an information age that requires much more than a high school diploma. Our education system must reflect the skills and knowledge essential to success in this new era" former Secretary of Education, Margaret Spellings (2008b, p. 2).

Background

For much of the twentieth century, most students were destined to filter into a workforce that might require a high-school diploma, but often did not. Glazer and Moynihan (1970) assert, "it was the 'bad boy' who wanted to go to college" (p. 199) during this era and that many families were deeply skeptical and sometimes even angry when a child expressed interest in a higher education that might take them away from working a family business or doing as his father had done (1970, p. 199-200).

The twenty-first century, deemed the Information Age, requires much more than a high school diploma to enter much of the workforce, and America's schools and their curriculum and accountability systems, must reflect those skills essential for success. "Economic, technological, information, demographic and political forces have transformed the way people work and live" (Partnership for 21st Century Skills [PCS], 2003, p. 4). In the 21st century, these changes will only continue to increase in velocity.

The United States is facing major challenges with the current economy and our state of global competitiveness. America is at a crossroads where it must chose to either "create low-wage, low-skilled jobs, or take full advantage of the Nation's labor force and create high performance workforces" (Stuart, 1999, p. 6). The Commission on the Skills of the American Workforce and the National Center of Education and the Economy (NCEE) released their first report in 1990, *America's Choice: High Skills or Low Wages* and warned that "if the United

States wanted to continue to compete in that market [of low-skill, low-wage work], it could look forward to continued decline in wages and very long working hours" (National Center of Education and the Economy [NCEE], 2006). If the United States wanted to continue to compete in an international market, they would need to abandon low-skill work and concentrate on high value-added products and services. Some might argue that given some of the dramatic changes in the American workforce over the last fifty years, America has already chosen a path to high-skilled, high-wage jobs. In the 1950's workforce, 20 percent of workers were deemed skilled and 60 percent unskilled (Stuart, 1999, p. 8). Comparatively, by 1997, 20 percent of the nation's workforce was unskilled and more than 60 percent were skilled (Stuart, 1999, p. 8). This truly signifies a shift that has already been underway in the United States economy and workforce.

American educators who are tasked with educating students for the demands of the 21st century, must also acknowledge that "American students and young adults place anywhere from the middle to the bottom…in all three comparative studies of achievement in mathematics, science and general literacy in the advanced industrial nations" (NCEE, 2006). This and other unpalatable statistics have led to a "widespread consensus… that our education and workforce development systems are failing to adequately prepare all students and workers with the essential skills – twenty-first century skills – necessary for success in a global economy" (PCS, 2009a). Murnane and Levy (1996) contend this issue "is not that U.S. educational quality has declined… But [that] the economy is changing much faster than the schools have improved" (p. 4). As Margaret Spellings, then U.S. Department of Education Secretary asserts in *A Nation Accountable: Twenty-five Years After A Nation at Risk*, "the rising demands of our global economy, together with demographic shifts, require that we educate more students to higher

levels than ever before. Yet, our education system is not keeping pace with these growing demands" (2008, p. 1).

The National Skill Standards Board states that today's economy "places value on broad knowledge and skills, flexibility, cross-training, multi-tasking, teaming, problem-solving and project-based work" (2002). Then Federal Reserve Board Chairman, Alan Greenspan (2000), stated:

> Workers in many occupations are being asked to strengthen their cognitive skills; basic credentials, by themselves, are not enough to ensure success in the workplace. Workers must be equipped not simply with technical know-how but also with the ability to create, analyze, and transform information and to interact effectively with others. Moreover, that learning will increasingly be a lifelong activity (p. 4).

Lifelong learning can no longer be a cliché and must actually be a component of working in the 21st century. Students today must be prepared for a workforce of jobs that do not yet exist. Richard Murnane and Frank Levy wrote in 1996 that, "roughly half of recent graduates have an education that is no longer in demand" (p. 4). Then, in 2006, Murnane and Levy explain that "employers judge that college graduates are more likely than high school graduates to have the skills needed to do the jobs requiring expert thinking and complex communication" (p. 6). Therefore, current students "need to be better educated to fill new jobs and more flexible to respond to the changing knowledge and skill requirements of existing jobs. Lifelong skills development must become one of the central pillars of the new economy" (Stuart, 1999, p. 6). Workers need the learning capacity and critical-thinking skills to become lifelong learners, continually updating their knowledge and skill base.

Statement of the Problem

Despite that we are ten years into the 21st century and many initiatives have been proposed and started, transitioning teaching methodologies to directly address these 21st century skills in the classroom has come with it's challenges and objections. Andrew Rotherham and Daniel Willingham (2009) believe "many U.S. Students *are* taught these skills – those fortunate enough to attend highly effective schools or at least encounter great teachers – but it's a matter of chance rather than the deliberate design of our school system" (p. 16). This striking inconsistency is a problem. Our students deserve a fair and equitable public education, which begs us to question why some teachers are able to elicit change in their schools and classrooms by putting 21st century learning skills at the forefront of their instruction, and why others are not.

In 2006, the NCEE asserted that the U.S. must "develop standards, assessments, and curriculum that reflect today's needs and tomorrow's requirements" (p. 14). The NCEE believes this could "spell the difference between success and failure for the students who will grow up to be the workers of 21st century America" (2006, p. 14). Developed in response to these and previously forecasted concerns of the NCEE, the Partnership for 21st Century Skills (PCS) formed, becoming a "leading advocacy organization focused on infusing 21st century skills into education" (PCS, 2009). The PCS contends "there is a profound gap between the knowledge and skills most students learn in school and the knowledge and skills they need in typical 21st century communities and workplaces" and through collaborative partnerships among educators, businesses, and community and government leaders, this group has developed a rigorous vision for 21st century learning that will strengthen American education (PCS, 2009).

In efforts to support the transition to these skills, North Carolina launched the Center for 21st Century Skills, which focuses on "improving North Carolina's educational system to ensure

that students graduate with the skills needed for college, work and life in a global economy" (PCS, 2008). Since its launch, the North Carolina State Board "has approved new leadership standards for school administrators and new teacher standards, each aligned to better deliver the 21st century skills students need to be competitive in the global economy" (PCS, 2009a). Even with this established support system, there are still many classrooms not focused on preparing the students for the 21st century in North Carolina.

Purpose of the Study

The purpose of this study is to identify the characteristics of teachers that enable them to enact change and adopt the framework for 21st century skills in their teaching and professional practice. These characteristics will include basic demographics, number of years teaching, teachers' tenure status, and other basic school statistics, as supported by Graham, Wilson, Gerrick, Fraas, and Heimann (2002) and their study of teachers' acceptance of change. Additionally, these characteristics will include teachers' attitudes and dispositions as measured along an agree and disagree continuum in response to the main elements of the 21st century standards. Administrators will find this data useful in the process of hiring new teachers that are willing and empowered to immediately begin their careers with 21st century learning in mind. This resulting data may also be utilized in better understanding the professional development, training, and/or support teachers need to elicit the needed student outcomes for a highly competitive 21st century workforce.

Research Questions

Specifically, this study will address the following questions:

1. What are the characteristics of teachers that enable them to adopt the Framework for 21st Century Skills?
2. What are the personal and/or professional obstacles from implementing 21st century standards in the classroom?

Definition of Terms

For the purpose of this study the researcher will apply the following terms and definitions as set by the PCS (2009b) in their *Framework Definitions* document*:*

Core Subjects – can include, English (reading and/or language arts), mathematics, economics, science, geography, history, government and civics, world languages, and the arts.

Global Awareness – learning from and working collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts.

Financial, Economic, Business and Entrepreneurial Literacy – understanding the role of the economy in society, knowing how to make appropriate personal economic choices, and using entrepreneurial skills to enhance productivity and career options.

Civic Literacy – participating effectively in civic life through knowing how to stay informed and understanding of governmental processes, exercising the rights and obligations of a citizen, and understanding the implications of civic decisions.

Health Literacy – obtaining, interpreting and understanding basic health information and services and using it in ways that enhance health, understanding preventive health measures, using information to make appropriate health-related decisions, establishing and monitoring personal and family health goals, and understanding public health and safely issues.

Environment Literacy – demonstrating an understanding of the environment, the circumstances and conditions that affect it, and society's impact on it, as well as investigating and analyzing those issues and taking individual and collective actions toward addressing the challenges surrounding it.

Media Literacy – understands both how and why media messages are constructed and for what purposes, examines how individuals interpret messages differently, how values and points of view are included or excluded, how media can influence beliefs and behaviors, apply a basic understanding of the ethical and legal issues surrounding access and use of media, and understand and utilize the most appropriate media creation tools, characteristics, and conventions.

Information, Communications and Technology Literacy – uses technology as a tool to research, organize, evaluate and communicate information, uses digital technologies, communication/networking tools, and social networks appropriately to access, manage, integrate, evaluate and create information, and apply a fundamental understanding of the ethical and legal issues surrounding the access and use of information technologies.

Creative/Innovative – using a wide range of idea creation techniques, creating new and worthwhile ideas, and elaborating, refining, analyzing and evaluating their own ideas in order to improve creative efforts.

Innovation – a new idea, method, and technology that makes a tangible and useful contribution to a field, such as education.

This chapter presented the purpose and goals of this mixed-method study, "Teaching in the 21st Century." The following chapter will present a review of the pertinent literature related

to the purpose of this study and will focus on three main bodies of research: teachers acceptance of change in schools, 21st century skills for education, and the North Carolina context.

CHAPTER 2. REVIEW OF LITERATURE

This chapter will present pertinent research literature related to the purpose of this study. Three main bodies of research lend themselves to this study. They are: 1) Teachers Acceptance of Change in Schools; 2) 21st Century Skills for Education, and 3) The North Carolina Context.

Teacher Acceptance of Change in Schools

School change can be challenging. Change requires the staff to "move from what has become at least old competence (if not incompetence) to what is now defined as new competence" and often times, this "change redefines proficiency" (Evans, 1996, p. 63). By its very nature, school change forwards a new proficiency, which inherently devalues previously current skills. Individuals who have been applying these previous skills effectively and see themselves as successful often meet change with resistance (Evans, 1996).

As change theorist Michael Fullan (2001b) states, "reform is not just putting into place the latest policy. It means changing the cultures of the classrooms, the schools, the districts, the universities, and so on. There is much more to educational reform than most people realize" (p. 5). "Resistance may be the normal," Evans (1996) states, "but there is more to the picture" (p. 91). He asserts that both people and the organizations they are part of, "vary in their responsiveness to change" and that "educators as individuals and schools as institutions may be more or less ready to consider and adopt a change program" (1996, p. 91). Although somewhat obvious, this truth is often overlooked by both the developers and the critics of reform.

Evans (1996) contends that there is little attention paid "to the lived realities of the educators who must accomplish change or to the practical problems of institutional innovation" (p. 91). The underestimation of the human component of change has often led to the demise of

innovative programs to improve our schools. In order to be successful in any innovation or reform, the personal and professional obstacles educators face must be realized. Fullan (2001a) agrees, "We are more likely to learn something from people who disagree with us than we are from people who agree. They sometimes have ideas that we might have missed…[and] are crucial when it comes to the politics of implementation" (p. 33).

A number of factors have been proposed that affect teachers' acceptance or resistance of educational reform and new innovation in the classroom. Evans (1996) affirms, "one's openness to innovation depends on… one's personality, life experience, and career experience" (p. 92). But when encountering resistance to change among a large group of teachers in a particular school or simply among a large group of teachers in general, Evans (1996) clarifies, "it is misleading to generalize about their personalities [then] and unhelpful to dismiss them as 'stubborn' or 'resistant'" (p. 92). He believes if the innovation is to be accepted, instead, "we need to move beyond such criticisms and consider the larger patterns of people's life and career development" (1996, p. 93).

Graham, Wilson, Gerrick, Fraas, and Heimann (2002), assert that four main factors influence whether a school-wide innovation will be embraced by its individual faculty members (p. 4). These factors include, 1) The number of years a teacher and principal have worked together; 2) The number of years a teacher has been teaching; 3) A teacher's tenure status; and, 4) The participatory nature of the school climate (Graham, Wilson, Gerrick, Fraas, & Heimann, 2002, p. 3).

Graham et al. (2002) consider the role of the principal in the change process highly significant and believe "for a principal [to be] an effective change agent [they must] create the desire within the staff to change" (p. 5). The principal must build a personal relationship with

his or her staff in order to accomplish change and the "teacher-principal relationship needs time to mature to a level where the principal can provide personalized support and direction" (Graham et al., 2002, p. 5). Thus, the number of years a teacher and principal have worked together can affect a teacher or schools' acceptance to a new innovation, such as the implementation of 21st century skills.

The number of years a teacher has been in the classroom and their tenure status might also explain why school reform is resisted or successful within a particular school. The balanced mix of educator demographics from the late 1960s and early 1970s has vanished and in 1996, the "teaching force [was] composed mainly of people in middle age and in mid-to-late career who have being teaching in their current school for twenty years or more" (Evans, 1996, p. 93). The National Center for Educational Statistics (NCES) (2007) states "the percentage of full-time teachers under age 30 was higher in 1999–2000 than in 1993–94 (18 vs. 12 percent) and remained at about that percentage in 2003–04." In 2000, the average number of years of teaching experience for all teachers was 14 years (National Center for Educational Statistics [NCES], 2005). Despite the stability tenure can provide, "too few veteran educators seem to be enjoying or displaying the benefits of age and experience… disenchantment is rampant among them (Evans, 1996, p. 94). Although at one time their craft may have been up-to-date, and mastered, they tend to not be able to maintain that level of excellence. Having a principal elicit change from these educators would mean they were doing things ineffectively their whole career.

On the other hand, Tom Peters (1987) does not support the belief that tenure is an "obstacle to rapid, complex, and unpredictable change" (Graham et al., 2002, p. 8). Peters (1987) believes tenure is an essential ingredient to large-scale reform and innovative change because it can provide a sense of job security, lending the ability to take risks.

In his work, Rensis Likert (1967) determined a faculty's innate nature to participate in change to be based on the staff's perception of the organization's climate in the following areas: 1) trustworthiness, 2) motivation, 3) having "open and productive dialogue," 4) ability to input in decision-making, 5) conflict resolution ability, and 6) level of goal-orientation (as cited in Graham et al., 2002, p. 8). Likert contends that "the more participatory an organization is, the more accepting of change it will be" (as cited in Graham et al., 2002, p. 9). This sense of ownership and cooperation among staff in any organization results in a work environment more accepting of innovation and change.

The process of implementing 21st century skills in the classroom is one that cannot be taken lightly or easily. For educators and administrators to accept the changes necessary to ensure implementation of 21st century skills, many factors in teachers' acceptance of this change must be taken into account, examined, and addressed.

21st Century Skills in Education

During the late–19th century, new educational programs began to emerge out of American reform efforts. One such example was that coined "progressive education" with its philosophies rooted in the works of Jean Jacques Rousseau, Johann Pestalozzi, and Friedrich Froebel (Progressive Education, 2008). Progressive education proponents, including American philosopher and educator John Dewey, maintained that schools should reflect the life of the society and insisted that education be a continuous reconstruction of the living experience, with the child the center of concern (Progressive Education, 2008). Dewey felt education and curriculum should change as society changed. "Democracy has to be born anew every generation, and education is its midwife," Dewey wrote in *The School and Society*, published in

1899. But he also felt the education system should also go beyond teaching just the basics of core academic subjects, that schools should teach students how to be problem-solvers by helping students learn how to think rather than memorize. Dewey (1899) also believed that schools should help students learn to live and to work cooperatively with others and wrote, "In a complex society, ability to understand and sympathize with the operations and lot of others is a condition of common purpose which only education can procure" (p. 54).

A call for an educational shift due to changes in society and its workforce is not a new discussion and has intensified in the past two decades. In 1990, the Commission on the Skills of the American Workforce released its first report *America's Choice: High Skills or Low Wages,* and threatened that "if the United States wanted to continue to compete in that market [of low-skill, low-wage work], it could look forward to continued decline in wages and very long working hours" (NCEE, 2006, p.3). If we wanted to continue to compete in an international market, we would need to adopt internationally benchmarked standards for education in order to address these needs (NCEE, 1990).

Soon after this report in 1991, the Secretary's Commission on Achieving Necessary Skills (SCANS) and the U.S. Department of Labor attempted to set forth their recommendations for addressing our changing work climate in *What Work Requires of Schools.* SCANS (1991) main focus was on the indisputable fact that, "more than half of our young people leave school without the knowledge or foundation required to find and hold a good job" (p.1). The Commission (1991) spent a year speaking with business owners and employers, managers and officials and found that if these new workers "are to enjoy a productive, full, and satisfying life" (p.1) they must have "a new set of competencies and foundation skills" (p.1). They (1991) also found that the high performance standards of today's most competitive companies "must become the

standard for the vast majority…[and] the nation's schools must be transformed into high-performance organizations in their own right" (p. 2).

As the educational climate continues to decline, scholars, such as Thomas Friedman (2005) asserts that the expansion of India and China into the global marketplace has made it possible for businesses to outsource many of the jobs that our college educated citizens would have done ten years ago and explains how he believes now that the world is 'flat'. Now that third world countries can more easily participate in the world economy, the days of the United States as a superpower are quickly disappearing and with it could go the middle class (Friedman, 2005).

We are now tasked with eliciting change in this new environment and are forced to face the facts that the NCEE (2006) now most recently reports, "American students and young adults place anywhere from the middle to the bottom…in all three comparative studies of achievement in mathematics, science and general literacy in the advanced industrial nations" (p.4). This and other unpalatable statistics have led to a "widespread consensus… that our education and workforce development systems are failing to adequately prepare all students and workers with the essential skills – 21st century skills – necessary for success in a global economy" (PCS, 2008). With that, the Partnership for 21st Century Skills led in developing the *Framework for 21st Century Learning,* which specifically outlines the intended student outcomes and support systems necessary to implement a focus on the future professional skills needed by today's students (PCS, 2009b).

The Framework is divided into four main components of learning: 1) Core Subject and 21st Century Themes, which includes all core subjects, global awareness, financial, economic, business and entrepreneurial literacy, civic literacy, and health literacy, 2) Learning and Innovation Skills, which includes creativity and innovation, critical thinking and problem-

solving, and communication and collaboration skills, 3) Information, Media and Technology Skills, which includes information literacy, media literacy, and information, communications, and technology literacy and 4) Life and Career Skills, which includes flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, and leadership and responsibility skills (PCS, 2009b). The PCS (2009b) states that 21st century learning "requires more than identifying specific skills, content knowledge, expertise and literacies" and because of this, they created an "innovative support system…to help students master the multi-dimensional abilities required of them in the 21st century," which includes the 21st century standards, assessments, curriculum and instructional support for these standards, as well as 21st century professional development and learning environments. Figure 1 below is a graphic representation of the interconnectedness of the 21st century Framework.

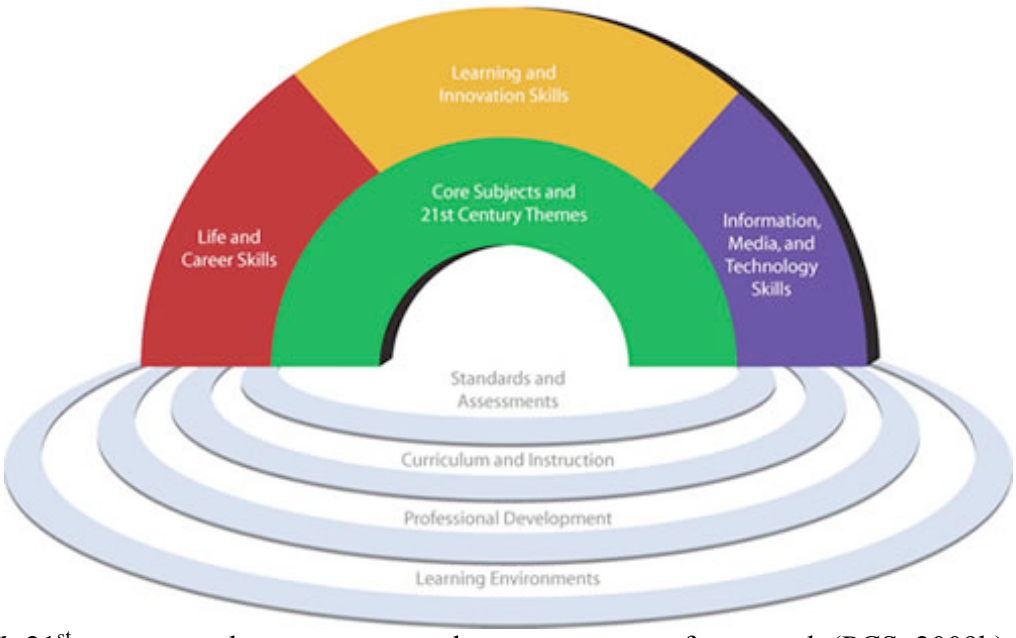

Figure 1. 21st century student outcomes and support systems framework (PCS, 2009b).

Most importantly, the Framework provides a structure for refocusing educational efforts on the thinking processes and skills students need to be most prepared and successful in today's

markets. It also provides a system of accountability and support for schools to ensure that they are being "more deliberate about teaching critical thinking, collaboration, and problem-solving to all students" (Rotherham & Willingham, 2009, p. 17).

The North Carolina Context

In August 2006, North Carolina's State Board of Education declared their mission, ensuring "every public school student will graduate from high school, globally competitive for work and postsecondary education and prepared for life in the 21st Century" and began actions to align instruction to the needs of the 21st century workplace. In June 2007, the North Carolina Professional Teaching Standards Commission (NC PTSC) (charged by North Carolina's Department of Education) adopted the newly aligned North Carolina Professional Teaching Standards. These standards are the "basis for teacher preparation, teacher evaluation, and professional development" (North Carolina Professional Teaching Standards Commission [NC PTSC], 2007, p. 1) in North Carolina schools today and are clearly aligned to the topics and concepts of the *Framework for 21st Century Learning* developed by the federal PCS (2009).

The NC PTSC (2007) "defines what teachers need to know and do to be able to teach students in the 21st century" by categorizing expectations into five main teaching standards: 1) Teachers Demonstrate Leadership, 2) Teachers Establish a Respectful Environment for a Diverse Population of Students, 3) Teachers Know the Content They Teach, 4) Teachers Facilitate Learning for their Students, and 5) Teachers Reflect on their Practice (p. 2-4).

These standards are intended to also serve as indicators of 21st century teaching in the classroom. The NC PTSC (2009b) believes "the purpose of setting high and rigorous standards for the teaching profession is to ensure that teachers have the skills, knowledge and experiences

necessary to prepare youth to thrive in a complex, dynamic, global, multicultural society." The NC PTSC (2007) has also developed the North Carolina Standards for School Executives and Superintendents to improve student, school, district, and state success and better align goals as a whole.

These high standards are not enough though; the NC PTSC (2009a) also advocates for "appropriate conditions in our schools and classrooms, which will enable highly skilled teachers to educate every child" with North Carolina Governor Mike Easley's Teacher Working Conditions Initiative. This Initiative adopted working conditions as its primary focus, administered a pilot study in 2001, and now will "encompass every public school-based educator in the state" (NC PTSC, 2009a).

This study will add to the existing knowledge base by illuminating the connections between teachers' acceptance of change as it relates to the 21st century skills and is connection to North Carolina initiatives. Additionally, this study will help administrators and educators better understand their role as teacher and facilitator of 21st century skills with their students. Educational leaders have the information necessary to help bridge the gap in a teachers' willingness to embrace and implement the necessary changes in their instructional content and methodologies and better understand the obstacles and barriers they face.

CHAPTER 3: METHODOLOGY

Introduction

This was a mixed-method research study. Findings from this study will help to better understand why some teachers are better able to implement curriculum change than others. Furthermore, this study will help to identify the barriers that exist for some teachers in terms of implementing 21st century skills in the classroom.

All research conducted and data collected was from faculty at one elementary school in southeastern North Carolina. Throughout this research, this school will be referred to by a pseudonym, Parker Elementary School.

Research Methodology

The researcher used data colleted from a teacher survey and subsequent teacher interview to better understand the perceptions and barriers to teaching in the 21st century. The researcher presented the objectives of the study to teachers at a faculty meeting and invited teachers to participate. This announcement was followed by an email to all classroom and specialist teachers inviting participation. After obtaining signed consent forms, the researcher emailed the survey's link to consenting participants. The last question of the online survey sought respondents to participate in the interview portion of this study. Participants had the opportunity to remain anonymous or enter their name to agree to partake.

Setting

Parker Elementary School is a diverse school with a current enrollment of 404 students for the 2009 – 2010 school year, but an average enrollment of 453 over the last five years.

Approximately 81% of the student population have been labeled economically disadvantaged, which according to North Carolina Public Schools and North Carolina Department of Public Instruction (2009), are students eligible for free or reduced-price lunch. At Parker Elementary, almost half, or 44%, of the students are Caucasian, and, of the minority groups represented in the school, 29% of students are Hispanic, 18% are African-American, about 9% are multi-racial, 1% are American Indian and the remaining 0.8% are Asian/Pacific Islander. According to the North Carolina School Report Card (2009), 14% of the students have a documented disability or are part of the Special Education program.

Of the nineteen classroom teachers and eleven resource and specialist teachers in the school, there are twenty-seven females and three males, majority Caucasian, one African American, and two teachers of Hispanic decent. About one-quarter of these teachers have advanced degrees and seven are National Board Certified. Exactly half the faculty has been teaching for ten or more years, 38% have taught 4-10 years, and 13% are still considered Initially Licensed Teachers (North Carolina Report Card [NC RC], 2009).

The average class size at Parker Elementary is comparable, if not lower, to the class averages of the district and state. During the 2008 – 2009 school year, classes averaged 19 students at Parker Elementary and 20 students at the district and state levels (NC RC, 2009).

The school's test scores for the North Carolina End-of-Grade tests (EOG) have been consistently lower than the district and state's averages in reading and math at all state-tested grade levels, which comprises 3rd, 4th and 5th grades (NC RC, 2009). However, for the 2008 – 2009 school year, Parker Elementary was designated a School of Progress with at least 60% of students at grade level and meeting Expected Growth (NC RC, 2009). The school also met 17

out of 17 Adequate Yearly Progress targets as set by the North Carolina Department of Public Instruction according to the federal No Child Left Behind Act (NC RC, 2009).

A few outstanding circumstances should be taken into account in understanding the demographics and leadership history at Parker Elementary. The district underwent a system-wide redistricting plan that went into effect for the 2007 – 2008 school year. As a result of this plan, the school's demographic makeup shifted drastically to its current student population.

Additionally, Parker Elementary has undergone several changes in faculty, leadership, and administration. The school has had three different principals and four different assistant principals in the past five years. Each year, staff must adjust to the new principal and vice principals' standards, strengths and weaknesses. The 2008 – 2009 and 2009 – 2010 school years were the first consecutive years with consistent administration in recent memory. According to the 2008 – 2009 North Carolina Report Card, the school has had a 6% teacher turnover rate.

Description of Survey Participants

Of the 17 survey respondents, 88% were female and 12% male, a fair representation of the entire faculty at Parker Elementary. A majority of the respondents were between the ages of 30 and 49. Respondents less than 30 years old and over 49 years old were also represented equally.

Seventy percent of survey respondents classified their education level as a Bachelor's Degree with a Teaching Certification (the lowest level of education necessary for certification). Twenty-four percent of respondents have a Graduate Degree or have completed some graduate work. One respondent has a Doctorate Degree; otherwise, none of the respondents had completed post-graduate work. Additionally, 18% of survey respondents are National Board Certified by the National Board for Professional Teaching Standards (2010) with an advanced

teaching credential, “designed to recognize effective and accomplished teachers who meet high standards based on what teachers should know and be able to do” (para. 2). These teacher quality statistics are displayed below in Figure 2 as reported by the research study and the North Carolina School Report Card (2009). This graph displays a close correlation between the survey population, school, district, and state average teaching populations.

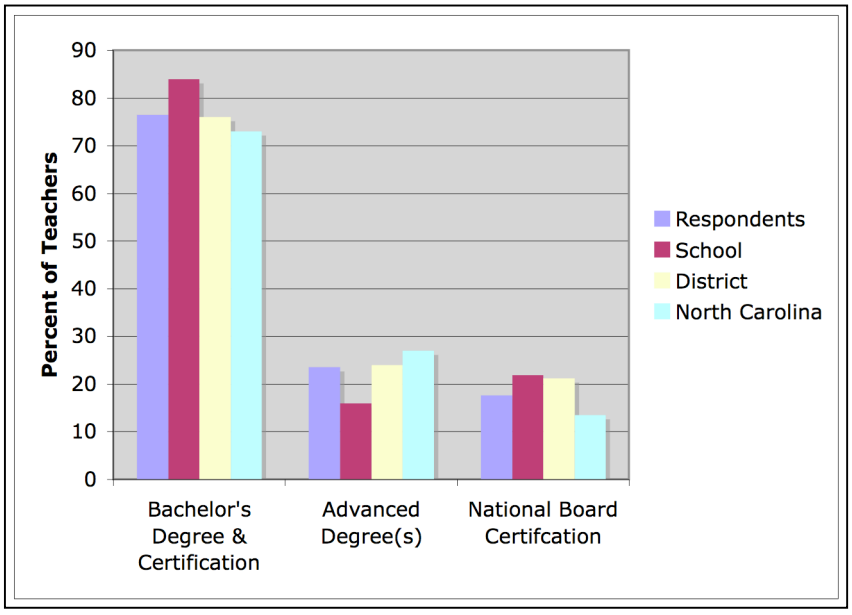

Figure 2. Percent of teachers at Parker Elementary School, the district, and the state with teaching certification, advanced degrees, and National Board Certification (NC RC, 2009).

The vast majority of survey respondents have worked with the current principal at Parker Elementary School for two school years. Two survey respondents have been working with this principal for one year; both of these respondents moved to the school within the last school year. The current Parker Elementary principal is new to the career after serving as Assistant Principal during the 2007 – 2008 school year.

The number of years the respondents have been teaching includes a wide variation. One quarter of the respondents has been teaching for three to five years and one quarter has been teaching for twelve to fifteen years. The remaining half of the respondents includes a

representative in each of the remaining number of years teaching, categories. Displayed in Figure 3 below, is the number of years survey respondents have taught in comparison to the number of years taught by the faculty of Parker Elementary, the district, and the state of North Carolina as a whole (NC RC, 2009). This graph shows a close correlation between populations.

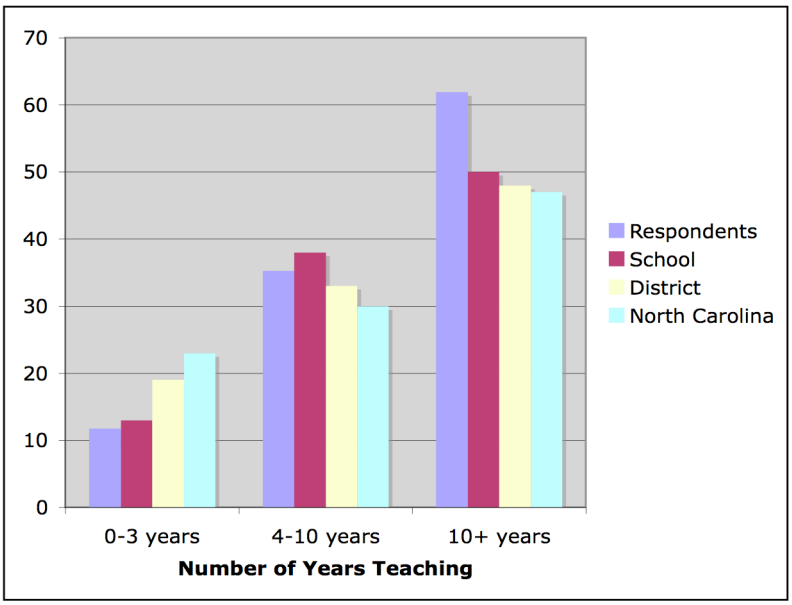

Figure 3. Numbers of years survey respondents have been teaching in comparison to the school, district, and state teaching populations (NC RC, 2009).

Seventy percent of survey respondents are considered a career teacher and withhold tenure status. The remaining 29.4% of survey respondents are considered non-tenured; this includes, but is not limited to Initially Licensed Teachers.

The survey respondent population includes at least one representative from each grade level and five respondents categorized themselves as "Other: IAS, IBS, ESL, AIG, etc." This shows a variation of teaching experiences from across the school and will allow all voices to be heard.

Additionally, survey respondents have had different backgrounds in the number of schools they have taught in throughout their career. Fifty-eight percent of survey respondents

have taught in one to three schools throughout their career. Thirty-six percent have taught in four to six schools, and the remaining 6% of respondents have taught in seven to nine schools. No respondents have taught in ten or more schools.

A majority (41%) of survey respondents stated that they attended school-mandated and self-chosen professional development at least once a month. Twelve percent of survey respondents attend professional development only once or twice a school year. The complete distribution of survey respondents and their attendance at professional development is shown in Table 1 below.

Table 1
Frequency of Attendance in Professional Development

Frequency of attendance	**Response Percent**
Once a week	0.0%
2-3 times a month	23.5%
Once a month	41.2%
Once every couple months	23.5%
Once or twice a school year	11.8%
Never	0.0%

Instrumentation

"Teaching in the 21st Century" Survey

The survey portion of this research addresses the various elements set forth by the Framework for 21st Century Learning as imperative 21st century skills. Some statements included the factors set by both, Graham et al. (2002) and Likert (1967), as determinants for a teachers' acceptance to change within the school. There were three main sections presented in the survey – *Demographics, Philosophy, Your Classroom* – as well as the final question for interview consent.

The first section collected demographic data from the respondents, including gender, age range, career status, number of years teaching, and included three of the four main factors that Graham et al. (2002) assert can influence whether a school-wide innovation will be embraced by its individual faculty members (p. 4).

The data collected from the next two sections, *Philosophy* and *Your Classroom*, were analyzed on an agree/disagree continuum – whether the teacher agreed to the statements about their teaching philosophy and classroom activities, or whether they disagreed with them. The possible answer choices on the continuum, ranged from 1 - strongly disagree, 2 - disagree to 3 - agree, and 4 - strongly agree.

The *Philosophy* section summarizes the respondent's personal perceptions and beliefs surrounding their participation within the school, as well as judgments of how 21st century instruction should look in the classroom. This section specifically focuses on philosophies, perceptions and beliefs, not necessarily realities. The *Your Classroom* section is scored similarly to the *Philosophy* section though attempts to addresses the realities of what is actually taking place in that respondent's classroom.

Qualitative Interview

The second instrument used in this research study is the follow-up interview. Four interviewees are chosen from the pool of teachers who included their name for acceptance in the survey. The interview is a researcher created protocol that uses stimulated recall and asks participants to respond to the following four questions:

- Which of these skills create problems in implementation in your own classroom?
- What are some of the barriers and/or obstacles to implementation?

- What do you foresee your school could do to better enable you to implement these standards?
- What could be provided as far as resources or training?

Data Analysis

The following methods of analysis will be used to address the research questions in this mixed-method research study.

Research question one: What are the characteristics of teachers that enable them to adopt the Framework for 21st Century Skills?

Based on the responses to the *Philosophy* and *Your Classroom* sections of the survey, a score of agreeability is generated. Respondents receive the following points for their answers on the agree/disagree continuum: 1 point – strongly disagree, 2 points – disagree, 3 points – agree, and 4 points – strongly agree. The more a survey respondent agreed with the statements provided in the survey, the higher their agreeability score. For both sections, *Philosophy* and *Your Classroom*, the highest possible agreeability score is 56. The lowest score is 14, which means the respondent strongly disagrees with all statements given in that section. The score of agreeability is then representative of their philosophical beliefs of, and active participation in, the utilization 21st teaching standards in their classroom.

These agreeability scores are then used to disaggregate the data by the demographic characteristics supported by Graham et al. (2002) and their study of teachers' acceptance of change. This includes age range, gender, number of years teaching, number of years a teacher and principal have worked together, and teachers' tenure status.

Research question two: What are the personal and/or professional obstacles from implementing 21st century standards in the classroom?

Survey respondents with low agreeability scores will be evaluated for patterns in demographics, or a respondent's participatory nature, in order to identify possible similarities in professional obstacles. Additionally, the questions and line of discussion set by researcher in the interview are tailored to address this research question. Each interview will be transcribed and analyzed for patterns and themes related to the obstacles and barriers teachers may face in implementing 21st century student outcomes in their classroom.

CHAPTER 4. FINDINGS

Introduction

This was a mixed-method research study. All data were collected in January and February 2010, within the 2009 – 2010 school year, from faculty at Parker Elementary School. Of the nineteen classroom and eleven support and specialist teachers, seventeen consented and responded to the online survey. Seven respondents agreed to take part in the interview portion of this research and four were subsequently interviewed based on their fit.

The survey consisted of 37 total questions and/or statements within three main sections: *Demographics*, *Philosophy*, and *Your Classroom*. The interview consisted of four main discussion-starting questions.

This chapter presents the research findings of this study. This chapter is broken into two sections detailing the findings by research question. The first section will address research question one and identify survey respondents' philosophical beliefs, and classroom practices, surrounding 21st century learning standards. The second section will answer research question two and identify key themes and correlating quotes from interviewees.

Research Question One

Data from the "Teaching in the 21st Century" survey addressed question one: What are the characteristics of teachers that enable them to adopt the Framework for 21st Century Skills?

In the *Philosophy* section of the survey, respondents were asked whether they strongly disagree, disagree, agree, or strongly agree to a set of positively stated beliefs statements based on the philosophies of 21st century teaching. This set a gauge for whether these respondents believe in the current reform change to 21st century standards in the classroom. The percentage

of beliefs chosen by survey respondents is detailed below in Table 2; highlighted percentages are the highest scores for that particular belief statement.

Table 2
Survey Respondents' 21st Century Teaching Philosophies

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	I believe the majority of the teachers at my school are active participants in my school's success.	0.0%	5.9%	**88.2%**	5.9%
2	I believe teachers can positively influence how a student deals with praise, criticism, and change.	0.0%	0.0%	23.0%	**76.5%**
3	I believe it is important to learn from and work with individuals of diverse cultures.	0.0%	0.0%	17.6%	**82.4%**
4	I believe students should exercise their rights and obligations as citizens at a local, state, national and global level.	0.0%	0.0%	35.3%	**64.7%**
5	I believe it's important for students to understand the role of the economy in society.	0.0%	0.0%	29.4%	**70.6%**
6	I believe students should understand preventative physical and mental health measures (i.e. proper diet, nutrition).	0.0%	0.0%	23.5%	**76.5%**
7	I believe students' ideas should be evaluated for their effectiveness and refined in order to improve their creative efforts.	0.0%	0.0%	41.2%	**58.8%**
8	I believe students need to evaluate evidence and arguments of alternative points of view.	0.0%	5.9%	35.3%	**58.8%**
9	I believe students should develop their own point of view and communicate it clearly.	0.0%	0.0%	29.4%	**70.6%**
10	I believe students should be able to judge the effectiveness of different media in different situations and thus use it appropriately.	0.0%	5.9%	35.3%	**58.8%**
11	I believe students should use technology to access information as well as use it for communicating in different ways.	0.0%	0.0%	11.8%	**88.2%**
12	I believe students are most successful in achieving goals with guidance.	0.0%	0.0%	23.5%	**76.5%**
13	I believe students can act responsibly with the interests of the larger community in mind.	0.0%	11.8%	35.3%	**52.9%**
14	I believe teamwork is a necessary part of learning.	0.0%	0.0%	35.3%	**64.7%**

Respondents received points for their answer on the agree/disagree continuum, 1 point - strongly disagree, 2 points – disagree, 3 points - agree, and 4 points - strongly agree. Their

agreeability score on this section of the survey correlates to their philosophical acceptance of this reform. Each respondent's individual agreeability score is graphed in a line plot in Figure 4.

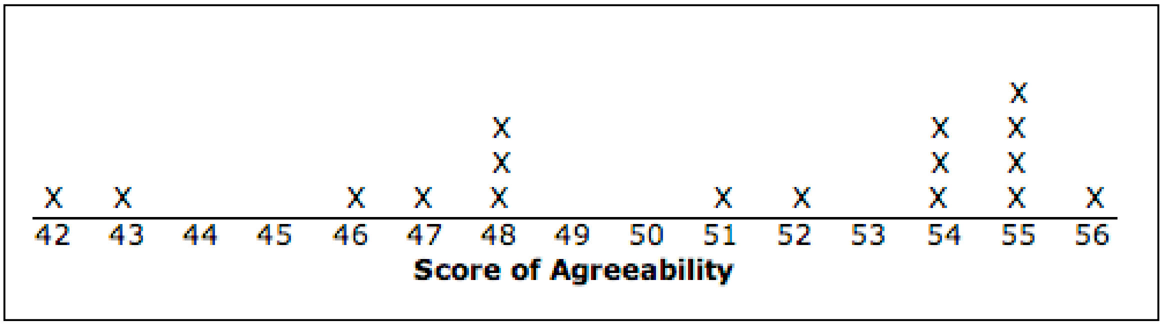

Figure 4. Distribution of survey respondents' philosophical scores of agreeability.

If a survey respondent strongly agreed with all of the belief statements of the *Philosophy* section, they would have a total agreeability score of 56. The lowest agreeability score of the survey respondents was 42, which creates a mean score of 52.

Survey respondents above the mean, would be considered to have a high agreeability score and thus, philosophically believe in the changes necessary for implementing 21st century teaching strategies. Scores below the mean would indicate those survey respondents who agree less with the philosophical beliefs of the 21st century reform. Demographics comparing these two groups of respondents are detailed in Table 3 below.

Table 3
Demographic Comparison by Agreeability Score

	Respondents with High Agreeability	**Respondents with Low Agreeability**
Average Age	32	38
Average Number of Years Teaching	8	16
Average Number of Schools Taught in Career	2	4
Tenured Career Status	4	7
National Board Certified	1	1

Sixty-three percent of survey respondents with agreeability scores above the mean attended professional development, either school-mandated or self-chosen, between one and three times a month. The remaining thirty-seven percent attend professional development every couple months. On the other hand, 63% of survey respondents with agreeability scores below the mean also attended professional development between one and three times a month. But, the remaining thirty-seven percent attend professional development only once or twice a school year.

The *Your Classroom* section of the survey proposes fourteen action statements that correlate to the belief statements of the *Philosophy* section and the 21st century student outcomes as defined by the PCS (2009) and NC PTSC (2007). Survey respondents were asked to strongly disagree, disagree, agree or strongly agree to these statements that address actions the students are taking within their classroom. These statements and the percentage of respondents are outlined below in Table 4. Responses with the highest percentage of respondents are highlighted in yellow.

Table 4
Survey Respondents' 21st Century Classroom Practices

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	I am an active participant in my school's success.	0.0%	0.0%	35.3%	**64.7%**
2	My students learn to understand other nations and cultures in our classroom.	0.0%	0.0%	**88.2%**	11.8%
3	My students learn about how to make appropriate economic decisions.	0.0%	17.6%	**82.4%**	0.0%
4	My students learn to understand the local and global implications of their decisions as citizens.	5.9%	17.6%	**64.7%**	11.8%
5	My students are aware of the available information and resources for making appropriate health decisions.	0.0%	29.4%	**64.7%**	5.9%
6	My students use a wide range of idea creation techniques (i.e. brainstorming, mapping).	0.0%	11.8%	29.4%	**58.8%**
7	My students have opportunities to hear and evaluate different points of view.	0.0%	5.9%	**58.8%**	35.3%
8	My students understand that communicating nonverbally is just as important as communicating verbally.	0.0%	23.5%	**41.2%**	35.3%

9	My students are taught a basic understanding of ethics and legal issues with regards to the use of technology.	5.9%	23.5%	**52.9%**	17.6%
10	My students use technology as a tool to research, organize, evaluate and communicate information.	11.8%	11.8%	**47.1%**	29.4%
11	My students are taught how to be flexible in the face of change (i.e. scheduling, job responsibilities, or priorities).	11.8%	5.9%	**47.1%**	35.3%
12	My students regularly set and record short and long-term goals and develop plans for success.	0.0%	35.3%	**52.9%**	11.8%
13	My students work in teams regularly to better understand collaboration and compromise.	0.0%	11.8%	29.4%	**58.8%**
14	My students are taught to use problem-solving skills to achieve a common goal.	0.0%	5.9%	41.2%	**52.9%**

As with the *Philosophy* section, respondents received points for their answer on the agree/disagree continuum in the *Your Classroom* section. A respondent's agreeability score on this section of the survey correlates to the actual 21st century philosophies they are putting in place in their instruction. In Figure 5 below, a line plot distribution of agreeability scores for classroom practices is shown.

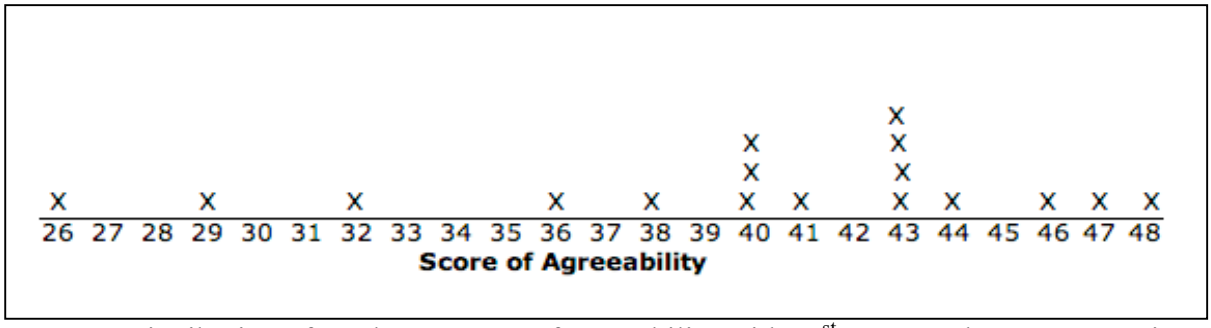

Figure 5. Distribution of teachers' scores of agreeability with 21st century classroom practices.

If a survey respondent strongly agreed to all of the statements in this section, they would have a total agreeability score of 56, similar to *Philosophy* section above in Figure 4. In Figure 5, the lowest agreeability score was 26 and highest 48. Approximately 73% of survey respondents agreed to currently addressing 21st century standards in their classroom. The mean score for survey respondent's agreeability to practicing the 21st century topics presented was 41. This mean is eleven points lower than the mean for philosophy agreeability, which implies that

survey respondent's believe in the practice of 21st century standards more than they are putting in practice in their classroom.

The comparison of total agreeability scores above the mean and below the mean is detailed below in Table 5. The highest possible agreeability score and lowest possible agreeability score are 112, and 28, respectively. The overall agreeability score mean is 92. The change from philosophy agreeability score to classroom practice agreeability score decreased with every survey respondent. This shows that every respondent believes he or she is implementing less of the 21st century standards in their classroom than he or she believes they should. That change varies from a difference of 3 points to a difference of 19 points.

Table 5
Comparison of Agreeability Scores

	Total Agreeability Score	**Philosophy Agreeability Score**	**Classroom Practice Agreeability Score**	**Change**
Above the Total Mean	103	55	48	-7
	101	55	46	-9
	101	54	47	-7
	98	55	43	-12
	97	54	43	-11
	96	56	40	-16
	93	55	38	-17
	92	52	40	-12
Total Mean	92	51	41	-10
Below the Total Mean	92	48	44	-4
	91	48	43	-5
	90	54	36	-18
	89	46	43	-3
	87	47	40	-7
	77	48	29	-19
	75	43	32	-11
	68	42	26	-16

Participants with a total agreeability score at or above the mean would be considered to both believe in 21st teaching practices and also implement them regularly into their instruction. Those respondents below the total mean do not necessarily disagree with 21st century philosophies and actions but are considered to believe and implement them less often than those above the mean.

The demographic characteristics of the survey respondents that fall above the mean and those that fall below the mean are displayed in below in Table 6.

Table 6
Comparison of Demographics

		Above the Mean	Below the Mean
Gender	Female	8	6
	Male	0	2
Age Range	21-29 years	1	1
	30-39 years	3	3
	40-49 years	3	2
	50-59 years	1	2
Education	Certification	6	5
	Some Graduate	0	1
	Graduate Degree	2	1
	Doctorate Degree	0	1
National Board Certified		1	1
Teaching Experiences	0-2 years	1	0
	3-5 years	2	1
	6-8 years	1	1
	9-11 years	1	0
	12-15 years	2	4
	16-20 years	1	0
	20+ years	0	2
Career Status	Tenured	3	6
	Non-Tenured	5	2
Number of Schools Taught in	1 school	3	2
	2-3 schools	2	3
	4-6 schools	3	1
	7-9 schools	0	2

Research Question Two

Qualitative data from the research study interview were used to address question two: What are the personal and/or professional obstacles from implementing 21st century standards in the classroom?

Five themes emerged from interviewing the four Parker Elementary teachers. These themes are listed in Table 6 below in no hierarchical order. Supporting quotes from the interviews are presented; for comparison, these quotes are organized by interviewees with the lower agreeability scores and those with high agreeability scores (See Appendix B – E for full interview transcriptions).

Table 7
Obstacles in Implementing 21st Century Standards

Low Agreeability Score Interviewees	**High Agreeability Score Interviewees**
Theme One: Teachers have an unclear understanding or lack skills, and need training.	
• "I think that most teachers don't have a clear understanding themselves of these areas and because we're so logged into teaching basic reading, math, science and social studies." • "We don't really have the time or skills to [teach Internet safety]." • "The first time you do something and it doesn't work, it's like, 'I've had enough of this, let's go back to the old way.'" • "I don't always know the best and newest things to do on the computer with the kids." • "I also think I need some guidance in how to teach some of those life skills. I'm kind of new at this and don't always know the best things to say or how to say things to teach kids to manage themselves, like in groups or when they can't keep organized	• "I think there could be professional development as far as how to incorporate current events in your classroom and how to be culturally sensitive, how to teach children how to appropriately debate, how to teach both sides, or the four sides, of an issue." • "I think there could be staff development. It would have to be really meaningful staff development and people would have to really want to buy into this. And say, 'If these children are going to be leaders of tomorrow, don't we want them to well informed?'"

with assignments and stuff." • "I need ideas about how to organize the students and actually teach them all of these things on top of what the standards say and tests say I need to teach."	
Theme Two: High-stakes testing limits time and increases pressure on teachers.	
• "I think that because as we went to the EOGs and everything is now so test oriented [explains why we got rid of programs addressing health literacy in the past]. And why we did away with the handwriting, and why we did away with the grammar books because now testing is our focus." • "They have to pass that EOG science test and teaching about economics isn't going to get them there." • "I feel so much pressure to focus on science only."	• "I also think we get a little wrapped up in the details of testing that we forget some of the core teaching, just the fun of reading a good book." • "That's where I think we're losing some of our kids 'cause its test, test, test. 'Read this, this EOG thing.' So when they get out of school they're like I'm sick of this! If we want them to be life long learners, they've got to want to read and be able to read different things." • "I think people are afraid to say that kids can't do it and as the teacher you're afraid to say the kids can't do it. So they fudge their numbers so it looks like they can." • "I think there's a lot of things going on with being told to teach a certain way and I think a lot of the creativity of the teachers is kind of being taken away. 'This is the only way to learn this or try that."
Theme Three: Lack of resources, both material and person, causes issues with implementation.	
• "Finding something that a low reader, whose basically reading on a late second/third grade level for a fifth grade topic is difficult." • "It would take me the whole weekend to pull it together and find enough stuff that would be meaningful and not just because." • "[So there are now two places health pops up…] But no resources." • "Also just needing someone to help to fix problems with the computer too. So I guess a person resource issue too."	• "It's hard for anything computerized. Right now I have four computers and I have no projection screens, no Smartboards, and I'm going to be the last to get one…but then it's hard for me to use technology." • "It took us two weeks [to complete an encyclopedia exercise] because I had to sit some here, some over there, and run around and help them all. Then get some of the others working in books so then we could flip, flop and you know it was a huge mess."

• "There's only four [computers in the classroom]. I can't really have them doing long, drawn out projects. It would take forever!" • "I would love having somebody to teach us ideas for implementing new stuff in our classes…But some body who is considered an expert, someone who can kind of find and set up cool stuff for us teachers who don't really have the time or don't know how to get started." • "If I had access to more computers regularly I might have the opportunities myself to dive into projects and teach the kids the proper uses of things and stuff. Four computers at one time, like I said, don't really cut it." • "The computer lab is just 40 minutes a week… How do they continue a project only touching it 40 minutes a week? That doesn't seem worth it."	• "I come up with these great ideas and think 'If only I had a laptop lab and I could have everyone making their own comic book.' There's just no way to do that now. The ideas are there, but the resources aren't. • "Technology being available. Not being able to have access to the programs, or even just the software or hardware that I would need to sustain strong technology instruction for kids. It's so hit or miss." • "I would like to have more access to different types of technology and media. And just be able to incorporate more." • "We don't have the time or resources to really challenge them."
Theme Four: Lack of time to address all necessary subject areas and student needs.	
• "I have a lot to teach and adding that in seems off topic." • "I have so much science vocabulary to cover. I can't get to it all." • "It's almost like too much stuff and too little time." • "With reading, we've got so much to try to cover and with so many children not where they're supposed to be… We need to fine tune what we do know and get that rolling." • "We don't really have the time or skills to do that." • "I think its really important and I think our kids have some pretty interesting views on money. They're really irresponsible with it, but I just don't have the time and it's not a really close fit to what I teach."	• "I will come up with these ideas, but I'm like, if I have a whole chunk where I could see this grade, for this long, and do this, they'd really get a lot out of it." • "I see the kids for forty minutes once a week. The continuity is just not there." • "Specials are the teachers' planning time. So there's no time to meet with [teachers to work more closely to integrate]."

Theme Five: Lack of parent, student, and teacher buy-in causes obstacles.	
• "The students have supposedly been learning science in every grade but for some reason when they get to me, it's like they've never learned science stuff in their other classes. I don't know if the other grades don't have time for it or if the other teachers don't teach it, or see the value in it, or what." • "[The students] definitely don't communicate well between each other but we try."	• "The lack of parental involvement in all areas of the child's life makes it very difficult for me to teach to think outside the four walls of my classroom. My students are missing the basics that could, and should be supported at home." • "A little more of the children debating issues and discussing them without it being like 'Oh, you can't talk about that at school' and you know, if we can't talk about this at school, and you can't talk about that at school, how are we going to make these children more globally aware?" • "There's no accountability and that's what it comes down to. Until the parents are being held accountable for academics and behavior. I don't think we're going anywhere." • "Getting people into the 21st framework of mind. It's not in a book. It's not easily laid for you. You have to think about what your goal is and go out and research how you're going to bring that down to a child's level." • "We have to get the kids to buy in to it." • "There's a lot of people in education that don't even like it and they gotta go. This isn't Wal-Mart." • "There's NC Reads today [in the computer lab] so we got booted. It's disappointing and frustrating that the kids' are not a priority." • "How is it okay to miss 27 days of school? How is that okay? How do we keep pushing them along?"

This chapter presented data collected from both the "Teaching in the 21st Century" survey and subsequent interviews. Chapter 5 will provide the implications, limitations and suggestions for further research on this topic, based on these findings of Chapter 4.

CHAPTER 5. IMPLICATIONS, LIMITATIONS, & RECOMMENDATIONS

Introduction

Chapter 4 presented the finding from this research study of the 21st century teaching beliefs and classroom practices of faculty at one Southeast North Carolina elementary school. This chapter will focus on the implications and limitations of this study, and include recommendations for future research in this topic.

Implications of the Study

Research question one asked: What are the characteristics of teachers that enable them to adopt the Framework for 21st Century Skills? The findings in Chapter 4 presented both the philosophical beliefs, and classroom practices, associated with 21st century learning, among all of the survey respondents. In doing this, Chapter 4, and more specifically Table 5, identified eight survey respondents that fell above the mean of total agreeability and eight that fell below the mean of total agreeability. Participants with a total agreeability score at or above the mean indicate a philosophical belief and current instructional practices that align with the Framework for 21st Learning as set by the Partnership for 21st Century Skills, and subsequently the North Carolina Professional Teaching Standards Commission.

The demographics of those survey respondents that fall above the mean help to identify the characteristics of teachers who are currently adopting the Framework. These characteristics include basic demographics (gender and age range), number of years teaching, teachers' career status, and other school statistics, as supported by Graham, Wilson, Gerrick, Fraas, and Heimann (2002) and their study of teachers' acceptance of change.

According to this research study, 100% of those adopting 21st century standards at Parker Elementary School are female. Both male teachers included in this study fell below the total mean agreeability score. The male/female ration of all survey respondents, as a whole group, was comparable to the current faculty population at Parker Elementary. With a majority of female on the faculty it is hard to conclude a correlation; though, it is a point of interest that the only two male teachers at the school would fall below the mean. Further investigation in schools with more diversified teacher population would be necessary.

A vast majority of high agreeability respondents are between the ages of 30 and 49 years, though the age ranges of those below the mean in belief and adoption is similar to those adopting 21st century learning. The average age of those above the mean is 39 and those below the mean 43. There seems to be only a small possibility of correlation between a teacher's age and their level of adoption of 21st century standards. Ages are too close, with only a four year gap between them, and further research with a larger sample size is necessary for verification.

The average number of years teachers that fell above the mean, have been teaching, is about 9 years, whereas those not adopting have been teaching on average 15 years. This leaves a six-year difference between means, a gap though not a large gap. This could be the point at which teachers cross a line of acceptance of change in their teaching career. Their craft at one time may have been up-to-date, and considered mastered, but as years continue they tend to not maintain that level excellence, remaining flexible and adapting to educational change. It is often thought that if a principal or administrator is eliciting change from these educators that might imply they had been doing things wrong all along, and thus resist the change.

Bringing all educators along throughout the change process is essential in assuring buy-in from all staff. The number of years of teaching experience does not have to remain an obstacle if

administrators work to assure these somewhat resistant educators of their past success, and include them on decision making and idea generating for the next plan. Author Edie Holcolmb (2009), believes "authentic change in school culture and practices doesn't occur by 'overcoming' bad practice. It occurs by building commitment to students that becomes so strong that people are willing to voluntarily let go of the old and move forward" (p. 6-7).

This can also ring true for career status teachers with tenure who are often perceived as disenchanted and disconnected. A majority (75%) of teachers falling below the mean agreeability score are tenured teachers. Thirty-eight percent of those above the mean are tenured, and a majority non-tenured. These findings justify some of the negative perceptions of tenured teachers. Fullan (2001a) believes, "We are more likely to learn something from people who disagree with us than we are from people who agree. They sometimes have ideas that we might have missed… [and] are crucial when it comes to the politics of implementation" (p. 33).

Through experience, tenured teachers bring a wealth of information and knowledge. To reengage this part of the school community, each teacher's strengths should be harnessed and commended for maximum buy-in and participation. As Lambert (2003) points out,

> The benefits of participation – improved relationships, altered assumptions and beliefs, shared goals and purposes, increased maturity and cognitive complexity – emerge in a spiraling way: the great the participation, the greater the development; the greater the development, the higher the quality of participation (p. 12).

Statement one in both sections of the survey, *Philosophy* and *Your Classroom,* addresses each respondent's perception of their active participation within Parker Elementary School and helps build conclusions about the school's overall acceptance of change. This corresponds to Likert's (1967) belief that the more active the organization, the more accepting it would be for

change. Only one respondent strongly agreed with the statement: "I believe the majority of the teachers at my school are active participants in my school's success." Though fifteen respondents agreed and the remaining one respondent disagreed. Though either way, 94% of considered the school culture as participatory. In the *Your Classroom* section, eleven respondents strongly agreed with the statement, "I am an active participant in my school's success." The remaining six respondents agreed as well, leaving 100% of survey respondent's considering themselves participatory in their school's success in some way. These respondents see the benefits of participation and are trying to do their part. It is up to the administration to truly harness efforts and include the experienced, tenured teachers throughout the transition to 21st century outcomes.

Graham et al. (2002) explains that, "the first step for a principal in being an effective change agent is to create the desire within the staff to change" (p. 5). "Since the change process can be stressful and oftentimes traumatic," Graham et al. (2002) continue, "the teacher-principal relationships need time to mature to a level where the principal can provide personalized support and direction" (p. 5). Most survey respondents, as well as the Parker Elementary faculty as whole, have been working with the current principal for two years. Only two survey respondents have been working with the current principal for one year and of those two, one falls below the total mean agreeability score and one falls below the mean. This does not give us a clear understanding of the principals' role as change agent with having limited experience and time with the staff. Over the past five years, the faculty has had to adjust to three different principals' and four different vice principals' expectations, strengths and weaknesses. This instability has hindered the implementation of a clear school vision and mission and may affect a teachers' acceptance of change. Only time and the current principal's commitment to Parker Elementary will be able to exemplify how this relationship affects the success of school-wide reform.

Research question two asked: What are the personal and/or professional obstacles from implementing 21st century standards in the classroom? The findings of the qualitative interview of Chapter 4 elicited five major themes among interviewees as obstacles in implementing 21st century standards in their instruction. Low and high agreeability score interviewees had some consistency among themes though some themes included more evidences than others.

The first theme, *Teachers have an unclear understanding or lack skills, and need training*, was mentioned by both groups of interviewees. In Table 1, in Chapter 3, 41% of survey respondents, attended professional development, self-chosen or school-mandated, once a month. Twenty-four percent attended professional development two to three times a month. But it is clear through this theme, that some faculty members feel they still need help and guidance in understanding, organizing, and implementing this reform. Further research is necessary to better clarify the missing links in addressing 21st century skills in professional development and the support necessary for teachers in implementation.

Quotes from both sides of the continuum detail respondents' needs, though, these quotes show a clear distinction between the type of professional development that is recommended and requested from each group. Ideas from interviewees with a high agreeability score offer more sophisticated suggestions, including "how to incorporate current events in your classroom and how to be culturally sensitive, how to teach children how to appropriately debate, how to teach both sides, or the four sides, of an issue" (See Appendix E interview transcription). The low agreeability score interviewees show a need for a more basic, beginning understanding of this change process to begin implementation. Scaffolding professional development for basic needs and advanced needs is one option for Parker Elementary to address this obstacle. Taking part in

professional learning communities, these two groups of teachers can work together to harness each other's strengths and boost participation in a collaborative method.

Theme two, *High-stakes testing limits time and increases pressure on teachers*, was also a concern for both interviewees with a low and high agreeability score. Teachers not adopting the Framework for 21st Century learning focused their barriers on curriculum specific needs for meeting proficiency on North Carolina End-of-Grade (EOG) tests. They feel their hands are tied to a specific way of teaching in order to meet the testing expectations. This pressure is inevitably affecting student outcomes, and as high agreeability score interviewees believe, taking away the love of learning. Statewide high-stakes testing is not an issue Parker Elementary can address directly but they can consider student performance through many eyes, including EOG data as one piece of that 'whole child'. Holcomb (2009) recommends that other "desirable student results such as citizenship can be revealed in such data as attendance, participation in service activities, and occurrences of vandalism and disruptive behavior" (p. 19). Through these various forms of data collection, administration and staff must mark the celebrations, and continually reflect on the school's strengths and weaknesses. This creates a sense of balance for teachers who feel pressure to pass the test rather than developed a lifelong learner, and allows for administration to maintain a data-driven school vision.

Theme three, *Lack of resources, both material and person, causes issues with implementation*, is a reoccurring issue in education across the nation. Holcomb (2009) asserts a key factor in the initiation of change is the "identification of a high-profile need that participants feel is relevant to them, for which a sense of readiness has been created and for which resources have been allocated to demonstrate the organization's commitment" (p. 12). This high-profile need and relevance, has been identified through the development of the Framework for 21st

Century learning and North Carolina's Professional Teaching Standards. That sense of readiness seems to be lacking even though interviewees feel they philosophical believe in the standards of 21st century teaching, as shown by the majority who strongly believe the statements presented in the *Philosophy* section on the survey, and in Table 2. Resources have not been allocated and teachers are not clear about the organization's commitment to this new reform.

Most comments made by interviewees concerning resources focused around issues with technology, media, and specifically a lack of computers. Every classroom at Parker Elementary contains four Internet-connected computers; additionally, the school has a computer lab with twenty-five computers. Interviewees find projects and extensive computer-based assignments difficult to complete over the long periods of time they take to complete. Options for flexible scheduling with the computer lab might be an option for Parker Elementary to investigate further so teachers feel they could address students' information technology and media needs.

Theme four, *Lack of time to address all necessary subject areas and student needs*, corresponds to theme two's pressure to address high-stakes testing. Many of the comments made by low agreeability score interviewees feel they do no have the time to address the 21st century standards on top of their current North Carolina Standard Course of Study. Clear and concise professional development can help to alleviate some of this confusion. As Rotherham and Willingham (2009) believe, "the skills students need in the 21st century are not new" (p. 16). Rotherham and Willingham (2009) believe critical-thinking and problem-solving, elements of the 21st century standards Learning and Innovation Skills section, "have been components of human progress throughout history… and what is actually new is the extent to which changes in our economy and the world mean that collective and individual success depends on having such skill" (p. 16). In other words, Rotherham and Willingham believe we have always taught these

skills, or at least they've always been some part of education, it is just our society is putting a different emphasis on them now. This change can be addressed through discussion and professional development, skills can be taught more intentionally. Integrating units of study for more authentic learning experiences can also address issues of time constraints. This, too, takes time though. Teachers actually being a part of this process though allows for buy-in and higher acceptance of change.

Theme five, *Lack of parent, student, and teacher buy-in causes obstacles*, is a theme felt more strongly by the interviewees with higher agreeability scores, especially with parental support. Douglas Powell (1990) believes "dramatic changes in the structure and lifestyles of families and growing societal pressure for children to possess specific knowledge and skills at an early age are just two of the new and challenging conditions of parenthood" (p. 1). "The formation of partnerships between parents and teachers that will foster children's development has been a persistent goal of most early childhood programs and elementary schools," and should remain a goal on the forefront of Parker Elementary's plan for school improvement. Student buy-in is often tied hand-in-hand with parental support and should also be investigated further.

Teacher buy-in has been discussed through their involvement throughout the reform process. Individual teacher's strengths and experience should be harnessed and utilized to form collaboration toward student success and school change.

Limitations of the Study

One main limitation of this research study was the sample size. Opening the survey to only one school, of 25 in the district, with thirty classroom and resource and specialist teachers, limit the views and experiences that can be shared. Additionally, a low number of survey

respondents consented to participate in the interview portion of the study and thus, limited the researcher as to who would be inevitably interviewed.

The researcher is also a limitation in this study. As an employee of Parker Elementary in a leadership position, fellow colleagues may have felt their opinions were not private and could jeopardize their positions. The researcher may have also included bias in her analysis as well.

Recommendations for this Study

Along with the recommendations for further investigation proposed in the Implications section of this Chapter, it is recommended that this research study be replicated in additional schools within the district and the following modifications be considered in the study design.

1). Replicating this study over a greater amount of time to allow for all teachers within a school to participate.

2). Asking all survey participants, not just a select few, to also participate in the interview portion for a more delineated view of opinions.

3). Replicating this study utilizing the North Carolina specific 21st century standards as the basis for survey and interview questions, rather than federal 21st century skills.

Conclusions

Education is a continuously changing environment and educational reform increases pressure on teachers' acceptance of change. The ever-changing economy and workforce burden Americans schools and the schools' curriculum, accountability, and instructional support systems must reflect the skills necessary for success in the 21st century. This research study encourages the continuation of additional analysis and meaningful research in the implementation of 21st

century skills in North Carolina elementary curriculum if success is guaranteed. All stakeholders must be a part of the reform process for maximum buy-in and participation.

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APPENDICES

APPENDIX A. "TEACHING IN THE 21st CENTURY" SURVEY

Survey conducted online at: http://www.surveymonkey.com/21stCenturyTeaching

Section I. Demographics

Gender

Male Female

Your Age

21-29 years 30-39 years 40-49 years 50-59 years 60-69 years

Education Level

Bachelor's degree + Teaching Certification | Graduate work | Graduate degree | Doctorate work | Doctorate degree

Number of years teaching

0-2 years 3-5 years 6-8 years 9-11 years 12-15 years 16-20 years 20+ years

Career status

Tenured Non-tenured

National Board Certified Teacher

Yes No

Current Grade level

Kindergarten First Second Third Fourth Fifth Other, IAS, IBS, ESL, AIG, etc.

Number of School Taught in Career

1 school 2-3 schools 4-6 schools 8-10 schools Over 10 schools

Frequency of Professional Development (both school-mandated and self-chosen)

Once a week Twice a month Once a month Once every couple months Once a school year

Section II. Philosophy

To what extent do you agree or disagree with the following statements?
Choose only one answer in the scale.

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	I believe the majority of the teachers at my school are active participants in my school's success.	1	2	3	4
2	I believe it is important to learn from and work with individuals of diverse cultures.	1	2	3	4

3	I believe it's important for students to understand the role of the economy in society.	1	2	3	4
4	I believe students should exercise their rights and obligations as citizens at a local, state, national and global level.	1	2	3	4
5	I believe students should understand preventative physical and mental health measures (i.e. proper diet, nutrition).	1	2	3	4
6	I believe students' ideas should be evaluated for their effectiveness and refined in order to improve their creative efforts.	1	2	3	4
7	I believe students need to evaluate evidence and arguments of alternative points of view.	1	2	3	4
8	I believe students should develop their own point(s) of view and communicate it (them) clearly	1	2	3	4
9	I believe students should be able to judge the effectiveness of different media in different situations and thus use it appropriately.	1	2	3	4
10	I believe students should use technology to access information as well as use it for communicating in different ways.	1	2	3	4
11	I believe teachers can positively influence how a student deals with praise, criticism and change.	1	2	3	4
12	I believe students are most successful in achieving goals with guidance.	1	2	3	4
13	I believe teamwork is a necessary part of learning.	1	2	3	4
14	I believe students can act responsibly with the interests of the larger community in mind.	1	2	3	4

Section III. Your Classroom

To what extent do you agree or disagree with the following statements? Choose only one answer in the scale.

1	I am an active participant in my school's success.	1	2	3	4
2	My students learn to understand other nations and cultures in our classroom.	1	2	3	4
3	My students learn about how to make appropriate economic decisions.	1	2	3	4
4	My students learn to understand the local and global implications of their decisions as citizens.	1	2	3	4
5	My students are aware of the available information and resources for making appropriate health decisions.	1	2	3	4
6	My students use a wide range of idea creation techniques (i.e. brainstorming, mapping).	1	2	3	4
7	My students have opportunities to hear and evaluate different points of view.	1	2	3	4
8	My students understand that communicating nonverbally is just as important as communicating verbally.	1	2	3	4
9	My students are taught a basic understanding of ethics and legal issues with regards to the use of technology.	1	2	3	4
10	My students use technology as a tool to research,	1	2	3	4

	organize, evaluate and communicate information.				
11	My students are taught how to be flexible in the face of change (i.e. scheduling, job responsibilities, or priorities).	1	2	3	4
12	My students regularly set and record short and long-term goals and develop plans for success.	1	2	3	4
13	My students work in teams regularly to better understand collaboration and compromise.	1	2	3	4
14	My students are taught to use problem-solving skills to achieve a common goal.	1	2	3	4

APPENDIX B: LOW AGREEABILITY SCORE INTERVIEW ONE

INTERVIEWER: Hello today! Thanks for interviewing with me. Today I was hoping we could talk a little more about teaching in the 21st century. You have already taken a survey about your philosophies and actions with 21st century skills and we are just going to get a little more into that.

RESPONDENT: Okay great.

INTERVIEWER: So in North Carolina we have seen new Professional Teaching Standards for the 21st century and here I have a short list of the 21st century student outcomes from the federal Partnership for 21st Learning. Take a look at this list (Interviewer shows 21st Century Student Outcomes). These are the main sections: Core Subjects and Themes, Learning and Innovation Skills, Information, Media and Technology Skills, and Life and Career Skills. Which of these skills do you think creates problems in implementation in your own classroom? Feel free to take your time to look through the list. I also have a full description of each of these if you are unsure of one of them.

RESPONDENT: I'm thinking it would be this one right here at the top.

INTERVIEWER: Okay, like the Core Subjects, like the Global Awareness.

RESPONDENT: Yes, the Civic, Health, and the Environmental literacy.

INTERVIEWER: What are some of the barriers or obstacles in implementing these literacies do you think?

RESPONDENT: Because I think that most teachers don't have a clear understanding themselves of these areas and because we're so logged into teaching basic reading, math, science and social studies. I can do Global Awareness because in my reading I pull in the social studies. I pull in the current events. I pull in the holidays and the customs and traditions of other countries. So I think I hit that one. Environmental is like only during maybe "Keep America Beautiful," It's more of a science topic. And I mostly focus on the social studies because since [another teacher] basically focuses on the science. So I feel that way I can do the nonfiction social studies reading for the EOGs [North Carolina End-of-Grade tests] but I'm also teaching the reading strategies.

INTERVIEWER: Yeah and so, finding the reading material on civics, meaning being a good citizen and all that, is difficult?

RESPONDENT: Right it is difficult and especially because of the way we have it with three different reading groups – the low, the medium and the high – finding something that a low reader whose reading basically on a late second grade/third grade level for a fifth grade topic is difficult. To get them to understand what civic is, is an issue in itself. So I think that would be probably the hardest.

INTERVIEWER: And then in health, I know in 5th grade, there is growth and changes that is addressed by the county.

RESPONDENT: Right, so I don't really do anything for health. In the past, I have also done things for like brushing your teeth, and May is the healthy pet month. Little things that come across that the county is doing, I can usually find something from my years of collecting. But not, if you told me I had to do that next week, it would take me the whole weekend to pull it together and find enough stuff that would be meaningful and not just because we're reading this but because its a health issue. And not somebody told me to do it. I mean I want them to leave me knowing that they have a lot of other resources then just coming to me for 120 minutes of reading a day.

INTERVIEWER: Integrating health you want it to be on a topic that important to them.

RESPONDENT: Sometimes I think health could be something [the P.E. teacher] could do on the rainy days or days that are too cold to be outside. And do a health unit, which is what the P.E. teachers used to do.

INTERVIEWER: Oh, really?

RESPONDENT: They would pull in the health on those types of days.

INTERVIEWER: I know they talk so much about keeping your body healthy and stuff. I think that would be an interesting way to address the topic. I have not looked directly at the P.E. standards and don't know exactly what is asked to achieve.

RESPONDENT: I don't know what's in there either.

INTERVIEWER: In third grade, we study the human body and so it naturally fits into our already mandated Standard Course of Study.

RESPONDENT: I know National Boards asks a health question as well because the National Boards in the middle group is like third grade to eighth grade, so their National Board test has a health-issue component.

INTERVIEWER: So now there's two places you see health pop up.

RESPONDENT: But no resources.

INTERVIEWER: So would that be the biggest barrier?

RESPONDENT: Twenty years ago we did teach health. The classroom teacher did four weeks of health and four weeks of science and we had an actual health book and health materials.

INTERVIEWER: Separate from science?

RESPONDENT: And we did a big deal with dental month. It was a county contest. We competed with other schools with how many kids went to the dentist and how many visitors you have come and talk about dental issues.

INTERVIEWER: I wonder why they got rid of those programs?

RESPONDENT: I think that because as we went to the EOGs and everything is now so test oriented, so that is why. And why we did away with the handwriting and why we did away with the grammar books. Because now testing is our big focus. Really in a reading program, you are not focusing on adjectives, adverbs, nouns; that's kind of gone by the wayside too. They thinking that's going to be taught in the writing block and that's not necessarily true.

INTERVIEWER: Right. It's almost like too much stuff and too little time.

RESPONDENT: Right.

INTERVIEWER: Do you think tools, or training, would be more effective in addressing this?

RESPONDENT: I think both. I think it's one thing to be given the tools, but if you don't know anything about a certain subject… You have to know about it you can't just read about it in a book and stand up, if you're going to make it meaningful and make it relevant and make the kids be a part. 'Oh wait a minute, let me read this page tonight and well talk about it tomorrow.' So I think you need a mixture of both.

INTERVIEWER: Okay, a little bit of both. Do you think it would be best incorporated with science, if we were trying to adopt health curriculum again? Or do you think it would be considered a good literacy skill?

RESPONDENT: I would think more the science or the P.E. section where you could find times to fit it in. Where with reading, we've got so much to try to cover and with so many children not where they're supposed to be. [The principal] told me we have 122 students in 3rd through 5th that are not successful in the EOGs. That's a big number when we have only 400 or so kids in the whole school. So trying to add more stuff isn't helping. We need to fine tune what we do know and get that rolling.

INTERVIEWER: Yeah, that is interesting. As I learn more about these 21st century standards, a lot of them naturally come in to curriculum; like civics maybe because you're trying to work on citizenship all the time in the classroom.

RESPONDENT: But I do wonder about some of these other topics. When you look at the breakdown of some of these information technologies, we're supposed to be teaching them Internet safety. And we don't really have the time or skills to do that. I like doing the technology though and getting more technology. Coming from being somebody, this is my 34th year of teaching, coming from being excited about getting a Xerox machine instead of a Mimeograph; and having a Smartboard, from the chalkboard. The kids that are coming to me in the fifth grade are coming to me with more Smartboard skills than I do, so I have a Smartboard Assistant in

each group, because they have the training other than me and my one time workshop. So it's been nice and I've been able to incorporate more things. Yesterday I did my first Senteo lesson.

INTERVIEWER: It's cool isn't it?

RESPONDENT: I told [another 5th grade teacher] I said, 'I cannot believe it was so easy!' I kept thinking, 'I have not touched these because I was so afraid.' My God, I only had a 'Click, this is how you do it, now go' workshop. I think its great but I think we need more training. I don't think a one-time training does it. There needs to be follow-up afterwards. Teachers could go and say 'this is the problem I'm having. Let me practice.' Instead of pulling someone that's techy to run to your room to show you what you're doing wrong. So then you can say 'this workshop is not necessarily on learning something new but to practice the skills. Don't practice these skills by yourself your classroom.' Kind of like the reading academy workshop and we did a make and take that day. We left that day with the materials. You don't learn about it and then go and never have the chance to create or make but they incorporate that in the amount of time. So I really think we need really look at what are our workshops.

INTERVIEWER: We need to look at what how we teach for our kids, for us too. Like teaching us problem-solving skills for the Smartboard or for the technology, to deal with issues.

RESPONDENT: The first time you do something and it doesn't work. It's like I've had enough of this let's go back to the old way.

INTERVIEWER: And then you don't know if you'll pick it back up again.

RESPONDENT: I love going to workshops, even though I've been doing it forever, but I like to know I have the time not necessarily in-between classes or in the afternoon, but the actual time in the workshop to say okay now I can do this.

INTERVIEWER: Like I've tried this, these are the obstacles I'm facing and how can I address these obstacles.

RESPONDENT: That's what I liked about the doing the new webpage workshop recently. We didn't just sit there and take notes. We sat down and did it. So whoever was teaching it was there to say 'oh you forgot this. This is how you do it.' And it was a friendly way and not where you felt you didn't want to raise your hand because somebody would think you weren't techy.

INTERVIEWER: Do you think that would be a good strategy for professional development across the board? Would that be a good strategy for all trainings?

RESPONDENT: I think so, I really do. Have someone teaching. You're learning, but you're also doing it and then have an opportunity for follow-up.

INTERVIEWER: Well, did you have any other thoughts about any of these proposed standards?

RESPONDENT: No, not really.

INTERVIEWER: Well thank you so much for taking the time to talk with me today. I really appreciate it and I hope you have a great rest of your day.

RESPONDENT: Thanks!

APPENDIX C. LOW AGREEABILITY SCORE INTERVIEW TWO

INTERVIEWER: Hey. Thanks so much for agreeing to talk with me. So, recently you took the survey I sent out about teaching in the 21st century and how you philosophically felt about the ideas and what actions you were already taking with them. Today, I was hoping we could talk a little more about that.

RESPONDENT: Okay.

INTERVIEWER: So, here is a list of the 21st century standards set by the federal Partnership for 21st Century Learning. These all correlate to the new North Carolina teaching standards we've been seeing lately. These federal standards are broken into four main themes and they are outlined here. (Interviewer shows 21st Century Student Outcomes). There is: Core Learning, which is global awareness, financial, economic, business, entrepreneurial, civic, health, and environmental literacy. Learning and Innovation Skills, which is the problem solving, creativity, and collaboration. Information Media, which is information literacy and media literacy. And finally, Life and Career Skills, which is flexibility and adaptability, initiative, social skills, productivity and accountability, and last, leadership and responsibility. With these in mind, which of these skills create the most problems in implementation in your teaching?

RESPONDENT: Hmm… Well, my first reaction is to say the Financial, Economic, Business and Entrepreneurial Literacy because I know I touch on problem solving and my students always collaborate or work in groups. They definitely don't communicate well between each other but we try, and we use the computer a lot. I probability don't teach them about directly to be responsible either, or how to be responsible I guess.

INTERVIEWER: What do you think are some of the barriers or obstacles you face in trying to implement the Financial, Economic, Business and Entrepreneurial literacy?

RESPONDENT: Well, I teach science so it doesn't really fit directly into my curriculum. I have a lot to teach and adding that in seems off topic. They have to pass that EOG science test and teaching about economics isn't going to get them there. I think its really important and I think our kids have some pretty interesting views on money. They're really irresponsible with it, but I just don't have the time and it's not a really close fit to what I teach. Environmental literacy fits in some of my science topics for sure and health literacy gets covered in the 'Growth and Changes' unit the county does.

INTERVIEWER: So you would say your biggest obstacle to fitting in these 21st century student outcomes would be that they don't align with your curriculum?

RESPONDENT: Yeah, they have me teaching only science. I can read and write and do math with the science but I'm supposed to focus on science alone. The kids learn math and reading from different teachers. I guess a lot of these topics fit more with them.

Now, I use the computers in science and the students learn to research topics and present their ideas and stuff but then again, I feel so much pressure to focus on the science test and

science curriculum that I don't think we touch on Internet safety or the actual how-to's of researching on the computer as much.

INTERVIEWER: What do you think our school could do better to enable you to implement these standards?

RESPONDENT: First of all, take some of the pressure off. I know these tests are important but I know they're not everything. I would love to be able to do more critical thinking projects and have students do big projects but I feel like I have so much science vocabulary to cover. I can't get to it all. The students have supposedly been learning science in every grade but for some reason when they get to me, it's like they've never learned science stuff in their other classes. I don't know if the other grades don't have time for it or if the other teachers don't teach it, or see the value in it, or what.

INTERVIEWER: So would communication between grade levels help alleviate some of that, do you think?

RESPONDENT: I'm sure it would help but I've taught other grades before and I know they have their own set of pressures and crazy amounts of standards to address. But I do think communicating or brainstorming ways we could all help to stair step science understanding could be a big help. Science can't be pushed aside anymore really; it should be a core subject like reading or math.

INTERVIEWER: What about other things the school could do to help you implement more of these 21st century standards?

RESPONDENT: Well, we do have lot of technology issues. There always seems to be something.

INTERVIEWER: So would you consider that an issue of resources?

RESPONDENT: I guess and also just needing someone to help to fix problems with the computer too. So I guess a person resource issue too. I also don't always know the best and newest things to do on the computer with the kids. I know some basic programs and stuff but I would love having somebody to teach us ideas for implementing new stuff in our classes. I use the four computers in my classroom a lot but since there's only four I can't really have them doing long, drawn out projects. It would take forever!

INTERVIEWER: Do you think professional development would help?

RESPONDENT: Yes, and also somebody here to help too. Sometimes I have all the training I can get in a hour but when I face an issue or come across something weird, I don't want to give up on using the technology, I would love someone who's not a classroom teacher and already crazy busy, but somebody who is considered the expert, someone who can kind of find and set up cool stuff for us teachers who don't really have the time or don't know how to get started.

I also think I need some guidance in how to teach some of those life skills. I'm kind of new at this and don't always know the best things to say or how to say things to teach kids to

manage themselves, like in groups or when they can't keep organized with assignments and stuff.

INTERVIEWER: Since you're kind of new to getting back into the classroom, do you find your colleagues are helping with some of those things?

RESPONDENT: Yeah but I don't always remember to talk to them about all the things that happen in my classroom. Mostly the outstanding stuff and addressing the curriculum is what we talk about. Plus they don't have the time to help me. I think I could help more in teaching them about life. I get really focused on the classroom stuff.

INTERVIEWER: So what else do you think the school could provide as far as resources or training?

RESPONDENT: I would like some more time to talk to teachers that have a similar style to me to see how they are doing things. I need ideas about how to organize the students and actually teach them all of these things on top of what the standards say and tests say I need to teach.

INTERVIEWER: More collaboration time?

RESPONDENT: Yes, and time that's not after school or on our own time but during planning time. It's really hard to do all that. So if we can't get together more often I guess I need more resources to give ideas on how to teach and fit everything in. Or if I had access to more computers regularly I might have the opportunities myself to dive into projects and teach the kids the proper uses of things and stuff. Four computers at time, like I said, don't really cut it. The computer lab is just 40 minutes a week and then I go to computer with my homeroom students, not the students as they are leveled for reading, math and science. So a project I'm doing with my high group I couldn't do during computer lab time 'cause I have a mix of my low, medium and high kids in there. It gets kind of confusing. I could do a project in the lab with just my kids but then again how to they continue a project only touching it 40 minutes a week. That doesn't seem worth it.

INTERVIEWER: Well, I appreciate you talking with me today about your ideas. Thanks again!

RESPONDENT: No problem…

APPENDIX D. HIGH AGREEABILITY SCORE INTERVIEW

INTERVIEWER: Okay, so you recently took a survey that focused on our change to into the 21st century standards. Our North Carolina standards are based on federal 21st century standards. So that is what we are looking today are the federal ones. They all connect. (Interviewer shows the 21st Century Student Outcomes outline).

These are the main 21st student outcomes: Core Learning, which is global awareness, financial, economic, business, entrepreneurial, civic, health, and environmental literacy. Then they separate, Learning and Innovation Skills, which is the problem solving, the creativity. Information Media, which is mostly you, information literacy, media literacy. And then, Life and Career Skills, which incorporates all of these things. So with those in mind, which of these skills create problems in implementation in your teaching? When you're looking at putting these in place in your library teaching? I'm sure you'll face different obstacles than classroom teachers with this.

RESPONDENT: the hardest thing is I see the kids for forty minutes once a week. The continuity is just not there. There is a lot of stuff I have great ideas for and I think there's no way to put it in place. It would unfair of the students for me to expect after a week to pull this right back up without going over everything again.

INTERVIEWER: That will be an issue for all specialists I imagine.

RESPONDENT: It's really hard and you know and it's hard for anything that is computerized. Right now I have four computers and I have no projection screens, no Smartboards, and I'm going to be last to get one, which is fine because I only see the kids for 40 minutes, but then its hard for me to use technology, well you know…

INTERVIEWER: And if you're learning about the different technologies now but you're not going to get to apply it for another year, you could lose some.

RESPONDENT: I'm not going to show the kids, 'hey look at this great thing you can do. Well, you can't do it. I'll just show you how to do it. But you're not going to get to it.'

I just go through a encyclopedia exercise with my 5th graders and it took us two weeks because I had to sit some here, some over there, and run around and help them and get some of the others working in books. So then we could flip flop, and you know it was just a huge mess. They all got to see it but you know its still like…hmmm, okay.

INTERVIEWER: So to kind of summarize that, you'd say it was resources?

RESPONDENT: Yeah, I come up with these great ideas and think 'if only I had a laptop lab and I could have everyone making their own comic book.' There's just no way to do that now. The ideas are there, but the resources aren't.

INTERVIEWER: That is a big one. Resources are a barrier we will always face in education, it seems. So although you're covering media and information literacy, it's a struggle and you're not sure if it's holding because it stretches over so much time?

RESPONDENT: You also get into like doing research and you have to get them to the point that they can all actually understand what they are doing. And only by 4th and 5th grade are they getting close to point of being able to go to the online resources and know what they are reading about. And then again with 40 minutes how long will it take me to get everyone logged in and go around and see and explain we're going to look up some historical people and write some biographies on them. You know and then you get to the point because its specials time you want to make it something fun and interesting and do the learning that way. So it's a real challenge. They pick up computer stuff fast. What I need to teach them is how to scan for information how to see what's a good bit of information, how to do an effective search. You really have to take your time with it and talk one-on-one and take your time with it and say 'why is it good?' And I could show them again and they would say 'oh okay.' But when they get up there and start doing it they are going to be like 'oh first thing that pops up.' Its almost like their brains are not quite ready. But maybe by fifth grade they start, but you have to show them a lot of different sites and say 'why is this site better than this site?' Then again you want them interacting with it because if I'm just up there talking they are going to be asleep and be looking out the windows. They're never going to pay attention.

INTERVIEWER: What do you think about, like, have you ever worked at a school where the teachers and you worked together more closely to try to integrate?

RESPONDENT: Nope, because Specials time is the teachers' planning time. So there's no time to meet with them.

INTERVIEWER: You're right. That would make timing and planning an issue.

RESPONDENT: Yeah it is and it is with everybody. I do know certain things, like I know [a fifth grade teacher] does do certain things, so I could be ready for her units. That's why I started doing the mythology stuff 'cause I knew she was reading it and so we worked together on that. But it's kind of a passing in the hall conversation. Otherwise, I'm in here and I don't see anybody. Plus I also think we get a little wrapped up the details of testing that we forget some of the core teaching, just the fun of reading a good book. That's where I think we're losing some of our kids because its test, test, test. 'Read this, this EOG thing.' So when they get out of school they're like I'm sick of this! If we want them to be life long learners, they've got to want to read and be able to read different things.

INTERVIEWE: That's something you're good at doing, promoting a love of reading. But then again it goes back to you're only 40 minutes a day and that love can't be developed in just that time.

RESPONDENT: Yeah that 40 minutes includes getting them in, getting them quiet, checking in and out books, taking a hundred questions, and then trying to get something done that's fun so they don't think they're being punished when they come to the library. You need a balance.

INTERVIEWER: Sounds like you have the ideas and philosophies of 21st century teaching it's just the implementation that is difficult. What barriers do you think are changeable?

RESPONDENT: You know flexible access/flexible schedule would be kind of neat. I will come up with these ideas, but I'm like if I had a whole chunk where I could see this grade, for this long, and do this, and really get a lot out of it. I would love to go through all the Dewey sections and have them pull the books out. Go to the 600-section and find those How-To books and then go through how to follow directions and how to put together that paper crane, or whatever, and talk about all that goes into that. Or just going through each section and explore it or whatever. And that's flexible access and that means you can't count on it as this Specials class once a week kind of thing.

INTERVIEWER: Right it wouldn't be a set schedule. For instance, you could focus on just a third grade project for a week or something

RESPONDENT: Because its really hard because the teachers, from what I understand with other librarians on a flexible schedule, the teachers end up signing up for the same time every week anyway. So they create their own set schedule instead of flexible use, as you need it.

INTERVIEWER: I can see, from a teacher's perspective, how that would happen. But I can also see myself doing huge projects like my recent biography project and how if I could have signed up for a couple blocks and done the research in here and I would have had a whole other experienced set of hands. Whereas I'm helping them all filter through their biographies and you would have been a great expert.

RESPONDENT: And see I could have been able to help.

INTERVIEWER: Obviously resources are a big one. But any other things you see keeping you from moving forward?

RESPONDENT: I don't know. I work around as much as I can. I change what I can. You work it all kind of together. You do a bunch of things at one time. Like when I teach the references. The 5th graders are doing an almanac Jeopardy game. When I'm there using the almanacs, I'm teaching them how to use the index, to scan for the key word in the question, and then where is that key word, look it up in the back, find those pages, scan the information, read the chart. Then make sure you get the information. And they're working together so they're working collaboratively to get the answer down correctly and help one another out. So you try to use a bunch of things at one time and hope for the best. They have fun usually.

INTERVIEWER: Well, that's all we really needed talk about I just wanted to see more of your perspective.

RESPONDENT: Well thanks!

APPENDIX E. HIGH AGREEABILITY SCORE INTERVIEW TWO

INTERVIEWER: Hi and good morning!

RESPONDENT: Hi.

INTERVIEWER: Okay, recently you took a survey that focused on our changes into the 21st century standards. The new North Carolina Professional Teaching Standards we've been seeing are actually based on federal 21st century standards. So that is what we are looking today are the federal standards, though they all connect in the end. (Interviewer shows 21st Century Student Outcomes list).

These are the main 21st student outcomes: Core Learning, which is global awareness, financial, economic, business, entrepreneurial, civic, health, and environmental literacy. Then they separate, Learning and Innovation Skills, which is the problem solving, creativity, and collaboration. Information Media, which is information literacy and media literacy. And finally, Life and Career Skills, which incorporates flexibility and adaptability, initiative, social skills, productivity and accountability, and lastly leadership and responsibility. So with those in mind, which of these skills create problems in implementation in your teaching?

RESPONDENT: I find the biggest breakdown in the home. The lack of parental involvement in all areas of the child's life makes it very difficult for me to teach to think outside the four walls of my classroom. My students are missing the basics that could, and should be supported at home.

INTERVIEWER: We are definitely in a difficult position right now. So, with 21st century teaching in mind, what are some of the barriers or obstacles in implementing these changes?

RESPONDENT: Technology being available. Not being able to have access to the programs or even just the software or hardware that I would need to sustain strong technology instruction for our kids. It's so hit or miss. Someone else may have signed up for it, or you are being booted from the lab because there's a ClassScapes test, or NC Reads class, something like that. We signed up today for the computer lab and we thought we were free and clear and we taught the kids the whole thing on PowerPoint. Oh no…there's NC Reads today so we got booted. It's disappointing and frustrating that the kids' are not a priority. The kids were very excited about the research they've been doing. They've been researching frogs from all over the world and we were trying to get them to look outside of Wilmington. It's just one of those things and it's frustrating.

I also think our kids have a really kind of messed up view of economics and financial situations. It's hard because being that our children, so many of them are welfare children, and generational welfare children, I'm combating that with them and them thinking that everything is free. The whole thing of what it means to save money, what it means to have money put aside, what it means to save for something long term, what it means for our country to be in debt. Even just our resources, what it means to conserve our resources. Things just aren't unending. 'If I get rid of this, I'll get another one.' That sense of entitlement, that type of thing hits me when I'm trying to talk to them about global awareness or talk to them about the economy or trying to talk

about financial situations, their lack of understanding of how works outside the welfare system is lacking.

INTERVIEWER: What do you think, other than obvious things like the parents having those important conversations, is there anything you think we could do here to try to fix some of that miseducation?

RESPONDENT: I think a lot of it comes down to money has always been an uncomfortable conversation for people and I don't think we talk about it enough. I don't think we educate our children from a very young age what money is and how it's used and the power behind it. And even materialism, I think that we lack the teaching of that. It's more important to be of good character than necessarily to be rich. But its more important for our kids to have those fancy sneakers than it is to be of good character, of how you got those neat sneakers. So that is something I think is lacking. It's hard because you don't want to be the moral police but we want to raise children that have strong moral and ethical character. We do a lot of programs like Second Step but I think that's just kind of just glazing over it instead of really dealing with the issues and talking about what we could do to build stronger citizens, to be more globally aware. There's the reason why these other countries hate us. And to be more globally aware and to be more globally sensitive; there's reasons why they hate us. When we're just running around acting like a bully all the time. That's something we could discuss with our kids but I don't think we do. I think we glaze over a lot of topics just to keep things p.c. [politically correct]. It just doesn't seem like its really strong for our kids. I'm not trying to put everyone on my agenda, my political agenda, I would just like there to be civil conversation on both sides. A little more of the children debating issues and discussing them without it being like 'oh you can't talk about that at school' and you know if we can't talk about this at school, and you can't talk about that at school, how are we going to make these children more globally aware? How are we going to teach them how to have a civil conversation of discourse and how are we going to make leaders of tomorrow when we won't even tell them the topics? Where can a child learn to have that conversation?

INTERVIEWER: Because its not happening it at home.

RESPONDENT: They're learning at the bus stop or from brother. And that's not showing both sides. That's a skewed point of view. 'It's just this.' Whereas, if we have a system of checks and balances, of okay, we're presenting both sides. That way we can educate a little bit more fully. Like they're telling us to educate about the census. Well that's great and we can educate about that and we can make everyone a little more understanding about it. But those are the types of conversations we should be having about a lot of things. Not just one week. Its just, I think we spend a lot of time doing things that really don't matter. In the grand scheme of things, they're fluffy and they don't matter. Where there are really big things going on that we barely brush over and that just make me really upset sometimes.

INTERVIEWER: Its not some training or professional development that needs to happen, it's a major overhaul?

RESPONDENT: I think there could be professional development as far as how to incorporate current events in your classroom and how to be culturally sensitive, how to teach children how to appropriately debate, how to teach both sides, or the four sides, of an issues. I think there could be staff development. It would have to be really meaningful staff development and people would have to really want to buy into this. And say, 'If these children are going to be leaders of tomorrow, don't we want them to well informed?' Or do we want them voting for someone because they think he's cute. Unfortunately, a lot of people of have turned around and are like 'well, we voted for you because you're black but then you're not standing up for us.' You don't vote for someone because of the color skin, you vote for them because of their politics. I think that a lot of people bought in to one aspect of a person as opposed to the whole person. They were aware of the person's politics, they were aware of what the person looked like. There's too much at stake to be looking at a person and voting for them.

INTERVIEWER: They need to know how to judge and evaluate in a positive way.

RESPONDENT: And looking at the whole picture as opposed to one piece ' oh that looks good.' That one attractive piece shouldn't negate everything else that's going on.

INTERVIEWER: Can you think of any other barriers that might be keeping us from doing that?

RESPONDENT: Um, I think there's a lot of things going on with being told to teach a certain way and I think a lot of the creativity of the teachers is kind of being taken away. 'This is the only way to learn this or try that.' One of the things they are complaining about from the middle school to fifth grade is we send them unable to work independently. So well its like if you center, center, center, center, no one is working independently ever. So you can't throw them into a situation and expect them to work independently. So we need to be conscience from grade to grade and from school to school where the kids stand with what's expected of them and try to appropriately prepare them for the next step. There need to be more communication between grades and the schools about where we need to go. And you know to have the whole concept of every child will learn this way. I'm not a big fan of that.

INTERVIEWER: We want everyone to be unique and individual but we'll put them into a mold. And the way we judge our teachers... That means if I'm a visual learner, but you're a kinesthetic learner, so then all of a sudden we have to teach the same way. We're not using our strengths either.

RESPONDENT: There are some kids who have a lot of trouble concentrating in that scenario. To not allow for that child to work in their best modality is really hard and I think a lot of people are afraid to do that. If someone walks in the room they have to see centers. We can't operate through fear. We can't teach through fear. We have to teach to our strengths and our students' strengths, and their goals.

To get back to the themes, I would like to have more access to different types of technology and media. And just be able incorporate more. I'm not a basal girl. I don't want to hang out in the basal and I would like to just spend some time being able to look on the computer for some articles and have all my kids do that and have them respond to those articles and whether they think they are good articles or not. 'Do you believe what is being written?' Just

because it's on the Internet doesn't make it true. And all that kind of stuff, and I just don't think we're setting ourselves up right now to be 21st century teachers. I mean forget the learners. We're not anywhere near there. But we're not setting ourselves up to be 21st century teachers even at this point.

INTERVIEWER: What do you think, specifically here at our school, we could be doing to kind of get us more prepared?

RESPONDENT: Getting the resources is point A, but getting people into the 21st framework of mind. It's not in a book. It's not easily laid out for you. You have to think about what your goal is and go out and research how you're going to bring that down to a child's level. But then, continue to grow them through media or through technology and get them to make the decisions about whether something is valid or not, whether you're going to accept or reject what this has said and how are you going to do that. 'What other media are you going to bring in to confirm or deny if that is true?' If a kid reads it, they think its true. If its in print, its on the computer, 'oh its true.' Not necessarily, Joe Shmoe wrote that and just because he wrote it and uploaded it to a computer does not make it true. All that stuff about The Stars…that's not news. That's gossip and sensationalism and our kids think its news. Our kids think that that's worthy. And that's the kind of stuff I think we need to get our kids to recognize and go 'that's not news'. I think we end of raising some very egocentric, narcissistic children that don't see the big picture and what it is really about. And if we are having problems with this generation, what's the next generation going to be like? If we're having an issue with this generation's parents, not parenting. These kids that are coming from that, what kind of parents are they going to be? They need a strong model. Where is the family going?

INTERVIEWER: It could break down even farther.

RESPONDENT: And what's that going to do to education, when there's no respect for education in the home? I mean we all know you're going nowhere without an education but we can't dumb it down. It's been dumbed down enough.

INTERVIEWER: If mom and dad don't see the value, the kids don't see the value and the cycle of poverty and ignorance continues.

RESPONDENT: It's just going to get bigger and bigger. So I don't know.

INTERVIEWER: Well I think you're absolutely right. And some of these things we don't have any control over at all.

RESPONDENT: There's no accountability and that's what it comes down to. Until the parents are being held accountable for academics and behavior I don't think we're going anywhere. I think that's our biggest obstacle at this point, is that there is no accountability that I can see when this breaks down. That it's okay to miss 27 days of school. How is it okay to miss 27 days of school? How is that okay? How do we keep pushing them along?

INTERVIEWER: And if you look at other countries, they don't educate in grade levels.

RESPONDENT: I would love to see ability being our focus. It goes back to the being p.c. [politically correct] thing. If you can't read, you're not moving. I think people are afraid to say that kids can't do it and as the teacher you're afraid to say the kid can't do it. So they fudge their numbers so it looks like they can.

INTERVIEWER: The thing is, the kids can do it, but they may have to be at their pace.

RESPONDENT: People need to be cognitively ready. There's this crazy assumption that all kids will be cognitively ready for kindergarten at five Its hard as a parent because I know the preparations I do before they go to school. Its hard for me to have my child held back, especially in a kindergarten situation, where may child has been in preschool and understands the concept of school and has to turn around and sit with someone who hasn't had any school exposure, any exposure to number or print, pretty much anything beyond a television or computer. It was hard on my child and it continues to be hard on my child.

INTERVIEWER: So she either gets frustrated with school or learns to adapt.

RESPONDENT: I think it has a lot to do with why we're falling behind globally. Why do we think our high kids aren't growing? Because we can't give them the attention they need to grow. We don't have the time or resources to really challenge them. Or if we had them grouped together and really pushed them. But I have my students grouped and they don't want to be pushed! We have to get the kids to buy in to it. It's a problem we're not looking at that more. It will be interesting to see how that could be accomplished. Some of them are ready so some of them need to move ahead.

INTERVIEWER: Our system is pretty archaic.

RESPONDENT: If we're moving to 21st century we need to move everything to 21st century. That whole mindset of we're going to evaluate our teachers of being 21st century, well let's pull everything with it and get away from the whole idea of what it should be and rework it. And I would really like to get rid of people that don't want to do it.

ITERVIEWER: Like the tenure system?

RESPONDENT: I hate the tenure system, and I'm tenured. I'll always work hard. There's a lot of people in education that don't even like it and they gotta go. This isn't Wal-Mart.

INTERVIEWER: Well, I appreciate you talking with me today. You've got some great ideas for changes that need to take place. I look forward to seeing what will be coming down next!

RESPONDENT: Yeah, no problem. Thank you.