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ELEMENTARY SCHOOLS AS MANDATED
BY THE FEDERAL GOVERNMENT CHILD
NUTRITION REAUTHORIZATION ACT
SECTION 204

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AN EXAMINATION OF THE FIDELITY AND BEST PRACTICES OF LOCAL
IMPLEMENTATION OF STUDENT WELLNESS POLICIES IN
VIRGINIA ELEMENTARY SCHOOLS
AS MANDATED BY THE FEDERAL GOVERNMENT
CHILD NUTRITION REAUTHORIZATION ACT SECTION 204

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy at Virginia Commonwealth University

By

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Reflecting back on my journey, I am reminded of the classic children's book by Watty Piper, *The Little Engine That Could*. Faced with the daunting task of pulling an overloaded train of toys on the journey over the mountain, the train engine repeats the mantra, "I think I can, I think I can!" During this educational journey, as I faced the long hours of work and personal sacrifice necessary to meet the demands of research, I also stated, "I think I can." As my journey ends and I rise over the mountain top, I would like to acknowledge those persons whose commitment and personal sacrifices pushed me over the mountain and helped me take "I think I can" to "I KNOW I can" to "I DID IT!"

Due to life's twists and turns, my journey took a bit longer than expected but along the way I was fortunate to have the support of several dedicated educators. I will first acknowledge the expertise, guidance, and patience of my dissertation director, Dr. Charol Shakeshaft. From the beginning, which now seems so long ago, Charol demonstrated more than a considerable amount of patience allowing me the time I needed to "just get started." With expertise in her field, she helped me narrow a very broad topic, fine tune my purpose, and guide me to the research. She recognized when I lacked confidence, needed a nudge, or simply needed to talk. I am grateful to Charol for sticking by me as it was her expertise that guided this study and without her I am sure I would be still stuck in "I think I can!"

I am grateful to Dr. Jo Lynne DeMary for reading my proposal, assuring me the study was one of merit, and encouraging me to stay the course. I am grateful that Dr. Cheri Magill and

Dr. Bill Bosher agreed to be committee members! Their insightful questioning during the prospectus hearing and their expertise in policy provided technical clarification and their affirmations of the study's design supported and bolstered my confidence. Also, I want to express my gratitude to Dr. Barbara Driver for offering her perspective and agreeing (at the eleventh hour!) to serve on my final committee. Without the direction, guidance, and patience of these educators, my goal could not have been realized. Their support and belief in me transformed what I only thought I could do into the reality of accomplishing this goal.

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Throughout this very long journey, my family has encouraged and loved me, patiently allowed the space and time I needed. Being from a big family is an awesome privilege as well as a blessing but also comes with responsibility. Over the last few years, too many years, I have not been able to be as responsive to my family, missing family gatherings and opportunities to share the responsibilities. I am grateful for their understanding and patience. I now look forward to eating breakfast with Pop more often, going to "the Springs" and "the Peper," and hours and hours of babysitting!

When I chose to embark on this journey, it was with the encouragement and support of my husband, C. Bryan Lewellyn. Just newly married, he convinced me that while it would take hours away from family time, it was an important challenge for me, one that I would cherish, and one we would both be proud. It is bittersweet to acknowledge the patience and support Bryan gave me in the beginning to pursue this goal as now that it is in sight, I am not able to share it with him. However, I do still feel Bryan's love and support and I know that he is proud and happy for me. I can almost see Bryan and Mama smiling and celebrating Carol Ann Atkinson Lewellyn and her journey from "I think I can" to "I really did it!"

As I close, I must acknowledge WHO led me down this path and thank my Lord and Savior, Jesus Christ. Ultimately HE provided the strength, resources, and people to supply the expertise and support I needed as I navigated the steep, challenging, but well worthwhile journey over the top of the mountain.

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ABSTRACT

AN EXAMINATION OF THE FIDELITY AND BEST PRACTICES OF LOCAL IMPLEMENTATION OF STUDENT WELLNESS POLICIES IN VIRGINIA ELEMENTARY SCHOOLS AS MANDATED BY THE FEDERAL GOVERNMENT CHILD NUTRITION REAUTHORIZATION ACT SECTION 204

By Carol Atkinson Lewellyn, Ph.D

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2014

Major Director: Dr. Charol Shakeshaft, Ph.D.
Professor, Department of Educational Leadership
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This study examined the extent of local implementation of student wellness policies in Virginia as mandated by the federal Children Nutrition and WIC Reauthorization Act. Using a nonexperimental quantitative design, this study evaluated the content of Virginia school division wellness policies and wellness policy implementation from the perspective of principals in elementary schools. The comprehensiveness and strength of the wellness policies were evaluated using the School Wellness Policy Evaluation tool. Quantitative data were collected from elementary school principals via a survey based on the components of the Governor's Nutrition and Physical Activity Scorecard. Descriptive statistics, analysis of variance, and t-tests were conducted for the wellness policy dataset. Results indicated statistically significant difference in the mean scores for strength of wellness policies written by large school divisions and for school divisions located in cities. Further analysis of differences for practical meaning

suggests that school division size and location influences wellness policy strength. There were no statistically significant differences in the policies based on free and reduced lunch qualification of students. Descriptive statistics and analysis of variance on survey responses found no statistically significant differences for wellness policy implementation based on school size, geographic location, or free and reduced qualifications. An examination of the combined data from the content analysis and wellness policy implementation suggests a relationship between written policy and practice. Wellness policy standards written with strong clarifying language were most often implemented in the elementary schools. Nutritional school meal standards and physical activity standards were implemented to a greater extent than other wellness standards. The standard for minimum nutritional standards for other foods and beverages outside of the school meal program and the standard for communication and promotion of wellness were not implemented as often. Evaluation standards were included in the wellness policies but implementation of this standard was not investigated in wellness policy implementation. Based on the findings, it is suggested wellness policy implementation could be extended by strengthening the standards for communication and promotion and other foods and beverages. Recommendations for continued research on wellness policy implementation include designing studies to directly address the correlation between the content of individual school division policies and wellness policy implementation. Further study is also recommended to link student health and wellness data to wellness policy implementation.

CHAPTER 1. INTRODUCTION

Federal Influence in Educational Policy

Currently, the federal government influences educational policy through its court decisions by offering funding incentives to create programs, and by using a leadership position to influence public opinion (Fuhrman, Goertz, & Weinbaum, 2007). This study examined the relationship between federal policy and local implementation. The policy that was examined was the Child Nutrition and Women, Infants and Children Program (WIC) Reauthorization Act signed into law on June 30, 2004.

An early example of federal education policy is the Elementary and Secondary Education Act (ESEA) in 1965, which introduced federal programs for states to address needs of students in low-income areas. In 1967, the legislation expanded to include opportunities for English language learners. Federal law addressed gender-based discrimination in education in 1972, and in 1975, the federal government mandated equal opportunity and services for children with disabilities by authorizing the Education of all Handicapped Children Law (1975) (Fuhrman et al., 2007; Rentner & Jennings, 2006). In 2001, the No Child Left Behind Act broadened the federal government's influence in school governance by expanding its focus on equity for specified groups of students to include a mandated accountability of education to ensure the academic success of all students (Fuhrman et al, 2007; Rentner & Jennings, 2006).

In 2004, the surgeon general of the United States named childhood obesity as the nation's number one health concern, citing rising rates of overweight and obese children and low levels of

physical fitness of children as indicators in measuring the overall well being and health of the nation. Although costs of health care and incidence of weight-related diseases were rising among children, health officials noted that there was a lack of awareness or buy in to this growing health problem among Americans. Acknowledging a social responsibility to promote student health, combat obesity and the problems associated with poor nutrition and physical inactivity, Congress identified schools as likely places to develop strategies to create environments in which children eat healthfully and engage regularly in physical activity (Greene, Parsad & Lewis, 2006). The Child Nutrition and WIC Reauthorization Act signed into law on June 30, 2004 included a mandate from the federal government for school divisions to write and implement local school wellness policies for their students (Cohen, Moffitt, & Goldin, 2007). The federal government keeping to a focus on whether states were fulfilling constitutional obligations to provide all students with an adequate education (Jennings, 2011; Kober, 2006) looked beyond academics to the responsibility to address the societal problems of childhood obesity and rise of diet-related diseases among children (Friedman, Brownell, Schwartz, & Henderson, 2009).

Purpose of the Study

The purpose of the study was to examine fidelity of local implementation of a federally mandated educational policy. The study examined fidelity of the Child Nutrition and WIC Reauthorization Act by analyzing the comprehensiveness and strength of local school wellness policies in the state of Virginia and the subsequent actions taken by principals at the elementary level to implement wellness policies.

Research Questions

1. Are Virginia school division wellness policies consistent with federal requirements mandated by Child Nutrition Reauthorization Act (CNRA)?

- a. To what extent are Virginia school division wellness policies comprehensive, as measured by the School Wellness Policy Evaluation tool?
 - b. What is the strength of Virginia school division wellness policies as measured by the School Wellness Policy Evaluation tool?
 - c. Are there differences in comprehensiveness and strength of wellness policies by size, geographic region, or percentage of free and reduced lunch qualifications?
2. To what extent do elementary school principals report implementation of their school division's local wellness policy?
 - a. To what extent are federal requirements for local school wellness policies implemented in Virginia elementary schools?
 - b. Are there differences in implementation patterns by school division size, geographic region, or percentage of free and reduced lunch qualifications?

Methodology

The study was a two-phase nonexperimental design using quantitative research methods with two guiding research questions. Local school wellness policies were analyzed in the first phase with the goal to determine comprehensiveness of content and strength of language and the extent polices have been written to incorporate requirements of the federal mandates of CNRA. The second phase included an analysis of data collected via a survey of elementary principals in Virginia regarding their perspective of the extent of wellness policy implementation.

CHAPTER 2. REVIEW OF LITERATURE

Search words used to create this review included school governance, federal role and influence in education, perspective of authority in policy making, effective implementation, policy to practice, influence of organizational factors, childhood obesity and overweight, local school wellness policy implementation, the principal's role in policy implementation, and wellness policy implementation in the state of Virginia. Databases used included Education Research Complete and Academic Search Complete.

Federal Policy and Equity

Federal influence on equity in educational policy became prominent after the 1954 *Brown v. Board of Education* decision. The decision in *Brown* opened doors to education for certain groups of students by mandating more and equal student access to school opportunities to furthering promoting its mission to preserve democracy and uphold the 14th amendment. Before *Brown*, many states and localities practiced discrimination and had neglected the needs of minority students. The decision in *Brown* in 1954 redistributed authority of school governance to include the federal government along with state and local government (Kober, 2006) and prompted a series of policies over the next several decades directed towards equity in schools.

The Cold War brought federal educational legislation when, in 1958, Congress passed the National Defense Education Act (NDEA) in response to the Soviet launch of Sputnik. NDEA provided funds to states with the intent to strengthen math and science standards and enhance instruction in order to increase international standing of American students. The federal

government's intentions were to ensure that highly trained individuals would be available to help America compete with the Soviet Union in scientific and technical fields (Jennings, 2011).

Antipoverty and civil rights laws of the 1960s and 1970s further expanded the priorities of the federal government establishing programming and funding to provide equal access for students and opportunity to particular populations within society. In 1965, the Elementary and Secondary Education Act (ESEA) created federal funding programs for schools, including Title I, which targeted programs to address problems of those students living in poor urban and rural areas. Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1975 prohibited discrimination based on race, gender, and disability and these enactments offered incentives to states to expand and protect educational opportunities (Jennings, 2011; Kober, 2006).

The federal government expanded its influence in education to include quality and accountability in education, along with student access and equity beginning in 1980. The U.S. Department of Education was established by Congress as a cabinet level agency of the federal government. The department was established to provide leadership in the debate on how to improve schools providing guidance, regulation, and oversight in education. The department reported and criticized the absence of standards in schools when it released, *A Nation at Risk: The Report of the National Commission on Excellence in Education*. This federal report, citing inadequate and declining achievement scores, graduation rates, expectations of students, recommended a centralized focus on academics and implied the need for reforms in school governance. National Assessment of Education Progress, a project that began in 1969, partly administered by the department was revised in 1988 to authorize states to take samples of student achievement and to report these results (Jennings, 2011; Kober, 2006).

In 1994 with the reauthorization and modification of the ESEA and Improving America's Schools Act (IASA), the federal government sought to help states advance overall standards-based reforms for all students replacing earlier isolated programmatic inputs and processes of the original legislation (Fuhrman et al., 2007). Under ESEA states were permitted to use different and less challenging achievement standards for economically disadvantaged students than those used for other students. A reauthorization of ESEA, IASA, required the standards for Title I and non-Title I students be the same, promoting high educational standards for all students and instructional improvements in schools (Fuhrman et al., 2007).

In 2001, the federal government again reauthorized and modified ESEA and IASA with the enactment of No Child Left Behind (NCLB). NCLB was written partially based on the states' varied and uneven responses to implementing IASA. Like IASA, NCLB required states to increase and equalize standards and test to determine success in meeting improvement goals. Additionally, with NCLB the federal government prescribed sanctions for schools that failed to meet progress goals (Fuhrman et al., 2007; Hamilton, Stecher, & Yuan, 2008). NCLB brought significant change in the role of the federal government and its influence in school governance. Similar to earlier legislation NCLB promoted equity and access, but NCLB established federal accountability standards with raised expectations for all students, not groups of students. The federal level furthered its influence on educational governance as states risked sanctions if they failed to meet accountability expectations. The expectation of the federal government through NCLB was for each school in each state to ensure that no child regardless of socioeconomic level, gender, disability, or ethnicity, be left behind peers in educational achievement in math, reading, and science. The purpose of the U.S. Department of Education was expanded to include

monitoring state compliance to federal directives in addition to data storage and administering grants (Jennings, 2011).

Federal Policy and Societal Problems

Many Americans believe that education has the responsibility to identify and solve social problems within our society. Over the last 50 years, the federal government has mandated educational policies to address inequities in education caused by the increasing diversity and economic shifts in society. Educational policies of the federal government mandate equal and successful opportunities for all, and hold schools accountable for the performance and the capabilities of students to perform (Fuhrman et al., 2007). By early 2000, there were concerns regarding the influence of unhealthy lifestyles of physical inactivity and poor nutrition on the ability of students to perform (American School Food Service Association [ASFSA], 1989; Greene et al., 2006; Trost, 2007).

Children who do not receive adequate nutrition are not getting the essential nutrients needed for optimal cognitive development and function (Cama et al., 2006). Studies show that hunger and lack of nourishment promote daydreaming and temper tantrums and hinder learning. Children with poor nutrition and hunger tend to have lower standardized test scores (Cama et al., 2006; Fetro, Given, & Carroll, 2010). Conversely, proper nutrition has been shown to improve behavior, school performance, and overall cognitive development (ASFSA, 1989). When properly nourished, children can actively participate in the total education experience (ASFSA, 1989; Cama et al., 2006; Fetro et al., 2010; Satcher, 2010).

With the Child Nutrition and WIC Reauthorization Act, the federal government exerted its influence to force the implementation of educational policy to emphasize wellness of students to address childhood obesity and related health concerns and to solve this societal problem. The

federal government included a mandate for school wellness policies in the Child Nutrition and WIC Reauthorization Act signed into federal law on June 30, 2004. If there is a combination of proper nutrition, physical activity, and physical fitness in the school day, then improved cognitive function, stronger academic achievement, increased concentration, and possibly better test scores can be the results (Bisceglie, 2008; Chomitz, Slining, McGowan, Mitchell, & Hacker, 2009).

Studies of Policy Implementation

What is Policy?

Public policy can be defined as a plan, a structure, a process of intentions written to influence actions to handle public situations, concerns, and problems (Fowler, 2004). Policies reflect the values and conditions of society and its guidelines and regulations structure, enhance, and improve education and its practices. Guidelines are provided to standardize and assist in the structure and order of policies. Regulations for policy provide the administrative details to implement the policy. Educational policies are analyzed to evaluate effectiveness of implementation and the ability of the policy to improve function and practices within the educational system (Fowler, 2004).

Policy Implementation

Research on policy implementation reveals the different perspectives of educational policy making. Educational policies have been written from a top-down perspective, where emphasis is on compliance and management from “the top” where policy is written, typically by those removed from the educational setting. Effective implementation from the top-down perspective is based on the determination of whether stated intentions have been explicitly implemented and desired outcomes have resulted. The bottom-up perspective considers the

actions during policy implementation, which can be ignored from a top-down perspective, with bottom-up incorporating the views of those who implement. Through the years, research has recognized a third perspective regarding policy. This third perspective merges the top, where policy is defined, and the bottom, where agents implement policy. The third approach considers a relationship between top and bottom, policy and practice, and recognizes context and organizational influences as essential to predicting the outcome during policy implementation (Harris, 2007).

Top-Down Policy Perspective

Top-down studies look at policy input and output of policy using a compliance perspective (Cohen et al., 2007). Policy formation includes determining the specifications and intentions, and implementation is carrying out the specific intentions as written in the policy's design. The policy design alone drives practice according to a top-down perspective (Mazmanian & Sabatier, 1989).

Top-down models of policy consider the policymakers at the top as the formal authority and minimize the significance or influence of adaptations made at the bottom, the implementation level. Policy is developed solely and strictly by the top as those are the ones with policy-making power (Harris, 2007; Mazmanian & Sabatier, 1989; McLaughlin, 1987). Studies based on a top-down perspective assumed if policies were well designed and the resources were available educational programs would produce the desired outcomes. Proponents of a top-down perspective assert that if the goals of the policy are clear and consistent, and the structure of implementation is clearly defined, then consistent implementation will follow, allowing generalization regarding the effectiveness of the policy's implementation (Cohen et al., 2007; Elmore & McLaughlin, 1982; Harris, 2007; Mazmanian & Sabatier, 1989).

The federal government research considered a top-down perspective in its analysis of the Great Society programs of ESEA authorized in the 1960s. Assuming that top-down directives in the mandated policy would be followed, the federal government expected that implementation of these programs would have the expected outcomes. Studies, however, revealed variation during implementation and in the outcomes (Harris, 2007; Mazmanian & Sabatier, 1989).

The National Association for the Advancement of Colored People Legal Defense and Education Fund's General Electric Tempo Study of 1968 reported variations in state and local uses of Title I funding. The study found that while some schools did spend Title I money on the implementation of reading programs, as was the intent of ESEA, the funding was also used for other instructional purposes and noninstructional purposes. Because Title I funding was used for other uses instead of what was intended by the design, it was difficult to conclude Title I had any reportable effects on student learning nor could it be said that Title I had actually been implemented (Cohen et al., 2007). The various contexts of implementation and the multiple outcomes of Title I led to questions regarding the content and quality of the mandates of the federal government's top-down policymaking influence (Harris, 2007; Mazmanian & Sabatier, 1989).

Early studies of ESEA prompted questions regarding policy making and the perspective of top-down policy design's ability to predict, manage, and control the structure of implementation. From a top-down perspective, policies are designed to expect certain particular consequences and outcomes. However, during implementation unintended consequences occur, and as shown in the ESEA studies, implementation can produce uncertain, unpredictable, and varied outcomes. These studies led researchers to acknowledge the need for research to look at

what actually happens when policy is put into practice in order to account and better prepare for varied consequences of policy implementation (McLaughlin, 1987).

Bottom-Up Policy Perspective

Drawing from the research of the implementation of Title I, Elmore (1980) argued that the design was not the place to consider possible outcomes. Rather than starting with determining regulations in a policy's design, Elmore suggests "mapping backward" from practice to policy. In order to obtain sought after outcomes, policy making requires looking beyond resources and regulations to implementation and needs of the implementers, the educators (Elmore, 1980). During implementation educators use their professional judgment to interpret the utility of policy to make adaptations and determine what the policy actually looks like (Berman & McLaughlin, 1979; Elmore, 1980; McLaughlin, 1987).

From a bottom-up policy perspective, implementation is defined as a process of engaged individuals embedded in context (Spillane, 2005). The process involves negotiation, sense making, bargaining, and the individual discretions and decision making of the implementers (Spillane, 1998). The bottom-up perspective of policy infers that those implementing policy produce the better strategies for implementation because they know things that policymakers are not able to know (Berman & McLaughlin, 1979; Elmore, 1980; Spillane, 2005).

The discretion exercised and adaptations made during implementation of Title I led researchers to consider looking at policy making differently. Elmore's research in 1980 and Hanushek's in 1996, emphasized that while funding and resources were essential components in policy making, it was necessary to investigate how implementers were choosing to use resources. When it was noted that implementation of policies often did not follow the specified specifics of the design, whether the goals were achieved or not, researchers began to question power given to

policy designers without input of the street-level bureaucrats (Berman & McLaughlin, 1979; Cohen et al., 2007; Elmore, 1980).

The study of street level bureaucrats is an example of how bottom-up policy works. During implementation, street-level bureaucrats are decision makers rather than just agents of decisions, determining how policies are adapted in implementation (Lipsky, 1980). The adaptations of the street-level bureaucrats become the strategies employed during implementation influencing the outcomes of policies (McLaughlin, 1987). Implementation of policy is best understood at the street-level as educators transform policy into practice. Acknowledging the empowerment of the street-level bureaucrats, Lipsky's contention was that practices that are actually carried out in the educational setting are the real policies (Lipsky, 1980).

Weatherley and Lipsky (1977) focused on the actions of street-level bureaucrats in a study of the Comprehensive Special Education Law of Massachusetts passed in 1972 that required fair, uniform, and equitable services be provided for all special education students in the state. Weatherley and Lipsky found that educators, the street-level bureaucrats, made changes to the mandates of the policy during the course of implementation when they were not provided the necessary support, time, or training to implement the policy exactly as written. Weatherly and Lipsky found that the degrees of pressure felt by the street-level bureaucrats to adapt the policy in order to implement were of greater influence than directives from the top. Their study summarized the importance of acknowledging the context that influences the specific actions of the street-level bureaucrats in their interpretation of policy, and their requests for support, time, and training to implement policy (Weatherley & Lipsky, 1977).

Berman and McLaughlin (1979) investigated motivation of the street level bureaucrats during implementation. The Rand Change Agent Study, which took place during the years 1973-1978, under the sponsorship of the U.S. Department of Education (named the Office of Education at the time) studied the implementation of federally funded programs developed in the 1960s and early 1970s which provided money to support practices to promote changes in bilingual and vocational. Mapping backward from implementation, the Rand Change Agent Study found motivation of the street-level bureaucrats allowed more opportunity for the policies to be effectively implemented. The degrees of motivation to incorporate new educational strategies influenced and increased the chance that the policy would be fully implemented and sustained (Cohen et al., 2007). Studies from the perspective of the street-level bureaucrat suggest that interpretation of actions and the implementation of actual practices at the street level provide insight for both resource allocation and policy design and ultimately successful implementation (McLaughlin, 1987; Weatherley & Lipsky, 1977).

Third Generation Policy Studies

Studies indicate that the collective knowledge of those at the street level is equally as important as the amount of funding, resources, directives, and intentions of policymakers (Harris, 2007). Recognizing this relationship, Sabatier (1986) laid out a “top-down/bottom-up” blended model for policy analysis. Sabatier’s model takes into account top-down elements of policy design and the actions and views of those who manipulate the policy to implement. Analysis from the top-down/bottom-up policy perspective relates the interpretation of policy, the strategies, and practices in implementation back to the policy’s design (Sabatier, 1986). McLaughlin (1987) built on Sabatier’s top-down/bottom up blended model, identifying a “third generation” of policy analysis.

Educational policy implementation does not occur within a vacuum and is influenced by political, social, environmental, and organizational factors. Societal conditions establish the need for policy and political, social, environmental, and organizational factors work together to determine the structure of its implementation. Policy implementation, defined as an interactive process, consists of a series of decisions, procedures, and actions by organizations and individuals (Berman & McLaughlin, 1979; Spillane, 2005).

The third generation perspective recognizes a relationship between the intentions of policymakers at the top and the implementation practices at the bottom (the street level), with respect to the influence of various factors present within the organizational setting. McLaughlin suggests that for an understanding of the relationship between design and practice to inform and model effective implementation analysis must examine all aspects of the process including the context in which it occurs (McLaughlin, 1987). Third generation studies analyze policy implementation from the perspective that implementation is developmental as it questions methodologies and incorporates feedback from all levels of decision and policymakers, and occurs in a specific organizational context made up of specific organizational factors (Harris, 2007).

The Rand Change Agent Study showed that once the street level bureaucrats understand policy factors, levels of commitment, motivation, and competence become important as internal factors driving implementation. The communication between policymakers and implementers define the context and environment in which policy implementation occurs (Harris, 2007). The context and environment is defined by organizational factors, school climate, relationships, role of principals, and the capacity of the organization to provide support, which in turn affects the fidelity of policy implementation (McLaughlin, 1987).

Referencing the Rand Change Agent study findings, McLaughlin (1987) summarized policy implementation as a process that takes shape over time with interactions among policy goals, implementation strategies and methods, and the educational organizational setting. The implementation process is marked by a series of decisions, procedures, and actions of the street-level bureaucrats significantly influenced by the local organization's environmental and social factors (McLaughlin, 1987).

Fullan (2007) studied the effects of organizational characteristics and local conditions on implementation of policy in schools. Several factors were found to be present in organizations that would suggest the eventual success of implementation. Schools having records of consistent implementation of school improvement policy were found to have supportive organizational environments. Such schools possess shared goals and visions under active and strong leadership and have the capacity, time, and supports necessary for implementing innovations. These schools incorporate problem-solving strategies for ongoing monitoring of policies, and teacher commitment and skills were characterized as strong. Schools that recognized and incorporated in consideration of their own particular environmental factors, and based their decisions for implementation of policy, were found to achieve expected outcomes (Fullan, 2007). Without looking specifically at policy implementation within the context of the organizational setting (Spillane, 1998), outcomes desired and the educational improvements intended by the design may not be seen (Hope & Pigford, 2001).

The Child Nutrition and WIC Reauthorization Act

Reauthorization of the Child Nutrition and Reauthorization (CNRA) by Congress in 2004 mandated that states institute student wellness policies for schools by the start of the 2006-2007 school year (McDonnell & Probart, 2008). The reauthorization outlined nutritional guidelines

for all foods served in schools, guidelines for nutrition and physical education; and also suggested ways to increase physical activity (Daniels, Queen, & Schumacher, 2007).

Mandates of the CNRA require that wellness policies include the following features: nutritional standards for foods available to students in schools, goals for nutrition education, and goals for physical education and physical activity. CNRA suggests school wellness policies be developed collaboratively by a committee of school community stakeholders to include educators, community leaders, and parents. Wellness policies should identify how, when, and by whom policies will be evaluation (Bisceglie, 2008; Brown & Summerbell, 2009).

Studies of Wellness Policy Implementation

Top-down perspective. Several studies examined the wellness policies to determine fidelity to federal law requirements. These studies looked at the comprehensiveness and the strength of the content of the policies and how closely the content reflects the requirements of the CNRA. Using a top-down perspective, these studies analyzed compliance of the design of policies.

Using their own checklists, the School Nutrition Association (SNA) conducted two studies to determine how local education agencies have responded to the requirements of the law. A Foundation for the Future II was published 2 months after A Foundation for the Future I. Analysis of Local Wellness Policies from the Largest 100 Districts (in the United States) was released in October 2006 (SNA, 2006).

Both SNA studies revealed similar findings about wellness policy content and strength (SNA, 2006). The key finding was that 98.6% of the policies addressed nutrition standards set by the United States Department of Agriculture (USDA) for school meals served through the National School Lunch Program and School Breakfast Program. The nutrition guidelines

covered a range of standards and emphasized whole grains, fresh fruits and vegetables, and low-fat dairy foods and beverages. The policies limited portion sizes and the number of calories from fat and sugar (SNA, 2006). Nutritional guidelines went beyond the guidelines for the reimbursable meal program in over 87% of the sampled policies to include guidelines for a la carte food choices and foods used in vending. The strength of the nutritional guidelines for foods outside of school food service was deemed weak as they were simply encouraged as practices and did not call for strict adherence. Guidelines for fundraisers, classroom celebrations, and the use of food as rewards by teachers in the classroom were addressed to lesser degrees of comprehensiveness and strength (SNA, 2006).

Nearly all policies included guidelines for nutrition education and physical education. Many policies incorporated additional elements related to overall wellness through other school-based activities. The most common types of additional wellness activities were providing an adequate amount of time for school meals, increased participation in the school breakfast program, and conducting informational and awareness programs on wellness for staff (SNA, 2006).

The SNA study examined the composition of the team involved in wellness policy implementation, monitoring, and evaluation and the structure developed to do so. The majority of the sample (89%) outlined a plan for implementation and evaluation but few followed the CRNA recommendation to involve the school community in the wellness policy process (SNA, 2006).

Action for Healthy Kids (AFHK), a national nonprofit organization that began in response to the 2001 Surgeon General's Call to Action to Prevent and Decrease Childhood Overweight and Obesity, conducted a study using a convenience sample of wellness policies

from across the United States. Using its own tool, AFHK Wellness Policy Fundamentals, the researchers compared components in the wellness policies against federal requirements. The study, *A National Snapshot of Local Wellness Policies*, identified gaps in content, support, and evaluation of implementation. Specific gaps in policy were the failure to include guidelines to adequately address availability and marketing of low nutrient, high-calories foods to students at school and the use of weak language addressing time, frequency, and intensity requirements for physical education. Other identified gaps were a lack of provisions for funding qualified staff and staff development, lack of specification regarding support for implementation, and the lack of structure for evaluation and revision of policies (Moag-Stahlberg, Howley, & Luscri, 2008).

Third generation perspective. Educational research and the standards movement of accountability suggest analysis of policy from pure top-down or pure bottom-up perspectives cannot provide the data necessary to prescribe future educational endeavors nor can it truly determine fidelity to policy mandates. Rather, to determine fidelity of federal policy and the extent policy in practice achieves desired outcomes, a perspective must be taken using top-down directives with the practices of the street level bureaucrats, and the context in which the policy is implemented. The communication and collaboration among policymakers who design policy, and the street level bureaucrats who implement, must be analyzed within the context and specifics of the environment in which policy implementation occurs (Harris, 2007).

Studies on wellness policy implementation examining the content of policies and implementation as a relationship between top and bottom, policy and practice, use the third generation perspective of policy analysis. Studies on school wellness policies using a third generation perspective merge the policy definition from the top (wellness policy content) with the bottom (practice in schools) where agents implement policy. Using this perspective, the

context of the educational settings in which the implementation takes place and organizational influences are recognized as essential to predicting the outcome during policy implementation (Harris, 2007).

Bridging the Gap, a research program funded by the Robert Wood Johnson Foundation, has produced several studies on wellness policies. *School District Wellness Policies: Evaluating Progress and Potential for Improving Children's Health 3 Years After the Federal Mandate* found that although many of the policies improved opportunities for student wellness since the federal mandate took effect, many policies did not meet all the requirements of the CNRA. A comparison of the nutritional guidelines for competitive foods and beverages sold in schools against Institute of Medicine nutritional standards revealed the majority of policies did meet the standards to serve more produce and whole grains and to decrease unhealthy fats, added sugars, salt and calories; and to prohibit sugar-sweetened beverages (Brown & Summerbell, 2009).

Bridging the Gap highlights the need to use strong language in the wellness policies in order to comply with CNRA. The report suggested stronger language was needed for guidelines setting standards for the sale of competitive foods and beverages served by food services and for the guidelines which outline how time is scheduled during the school day for students to have access to quality physical education and physical activity (Belansky, Chriqui, & Schwartz, 2009).

The sample policies in Bridging the Gap had provisions for physical education, but the provisions were not aligned with the evidence-based guidelines of the National Association for Sport and Physical Education (NASPE). Bridging the Gap policies did not meet recommendations for engaging students in moderate-to vigorous physical activity throughout the school day in addition to physical education. Bridging the Gap revealed reports from some

school divisions that because of increased emphasis on student achievement schools were forced to cut back on time scheduled for recess and physical education in order to provide more time for the academics (Oliver, Schofield, & McEvoy, 2005).

Schools face struggles incorporating wellness policies into the school day as additional mandates take time away from the academics to focus on student achievement so no child is left behind. Based on the assumption that wellness policies help students to be healthy and ready to learn, wellness policy implementation was specifically examined to determine if academic achievement was adversely affected when the additional priorities of more physical activity and education were implemented. Studies revealed that in schools that determined how to give students increased time for physical education, academic achievement was positively affected (Satcher, 2010). In Massachusetts, students who received double the amount of physical education scored significantly higher in language arts on standardized tests than students who participated in only half the amount of time in physical education (Troost & van der Mars, 2010). In North Carolina, a program called Move More, designed to give “moments of movement” and “brain breaks,” was implemented through wellness policies in order to provide more physical activity. Based on NASPE’s recommendation that children not experience prolonged periods of inactivity during the school day, movement moments allowed movement and mental breaks at the same time. The breaks improved on-task behavior and showed an overall 8% increase in student focus and as much as 20% for students who tended to be the least focused (Troost & van der Mars, 2010). This approach, incorporating physical activity into academics, models how the federal policy for wellness can be prioritized along with academics throughout the school day (Satcher, 2010).

In an Austin, TX study, the Cooper Institute found that students who were physically fit were more likely to do well on state standardized tests, to have good school attendance, and to be less likely to have disciplinary referrals. The fitness tests measured body composition, aerobic capacity, muscular strength, endurance and flexibility to determine whether students were physically fit for age and gender (Satcher, 2010). A California study also used the Cooper Institute's physical fitness tests and compared results to reading and mathematics scores on achievement tests (Grissom, 2005). Results indicated a consistent positive relationship between overall fitness and academic achievement. As overall fitness scores improved, so did the mean achievement scores improve (Grissom, 2005). Brain research and studies on successful strong comprehensive wellness approaches would suggest that student wellness policies yield benefits to schools as they do not hinder academic achievement, but rather promote it and enhance the total school experience (Grissom, 2005; Hillman, Erickson, & Kramer, 2008).

Federal law mandates implementation of wellness policies but only a limited amount of funding is available from the federal government. Studies on wellness policy implementation reveal that lack of adequate funding creates a significant barrier for some to implement of wellness policies (Agron, Berends, Ellis, & Gonzalez, 2010; Bisceglie, 2008). A wellness policy implementation study in California reported additional funding would be needed to provide the staffing necessary for full compliance of the nutrition education, physical activity and physical education goals. In some cases, additional facilities would be needed (Agron et al., 2010).

School food services provide a la carte choices of competitive foods and beverages to students in addition to school meal programs. Competitive food sales generate revenue that supports not only food service operations but also the funding of academic curricular programs, co-curricular activities, and after-school activities. Higher costs are associated with improving a

la carte options (Agron et al., 2010; Satcher, 2010). The California study found that schools lost funding when the sales of competitive foods were replaced with healthier choices. The California study noted that in addition to the higher upfront costs to purchase healthier choices, students were not buying the more nutritious healthier choices. Revenue from vending and fundraising also suffered as wellness policy requirements rule out the more popular competitive foods schools sell (Agron et al., 2010). The competing needs for revenue and for healthy food choices create a barrier to implementation of wellness policies (Belansky, Chriqui et al., 2009).

The What's Working project described wellness policy implementation in elementary schools in Colorado. Before and after the mandate went into effect, a random sample of rural elementary schools where at least 40% of students qualified for free or reduced-cost lunch responded to surveys with questions about nutrition and physical activities in their schools. Comparing the two surveys, it was found that after the mandate there was increased time in physical education but time per week for recess decreased (Belansky, Cutforth et al., 2009).

Overall the policies reviewed in What Works were found to use weak language for their guidelines. Respondents listed competing pressures for time to implement other policies, lack of resources and support available for implementation, principals' lack of knowledge about the policy, and the lack of accountability measures to evaluate policy implementation as their biggest concerns. Echoing CNRA's recommendation, the What Works Project concluded that communication and collaboration among stakeholders to discuss concerns would support wellness policy implementation and allow more opportunity for fidelity. The What Works project reinforced the importance of a team approach to address wellness policy implementation concerns by monitoring and evaluating the process of implementation (Belansky, Cutforth et al., 2009), all of which are written in CNRA.

Although budgets and time are stretched and challenged to support all aspects of the educational program in schools, fidelity to federal mandates to implement wellness policies at a reasonable cost can be realized when a collaborative approach to implementation is used (Fetro et al., Givens, 2010). The Centers for Disease Control and Prevention (CDC) distributed a limited amount of funding for support of programs to build knowledge and capacity in the area of student wellness, and several states responded to CNRA and passed laws requiring local school wellness policies with the support of this national organization.

The Houston TX Independent School District launched a whole system campaign called Healthy Kids, Healthy Schools as their response to the federal mandate for wellness policies. The Houston program, overcoming the funding challenge with CDC and community support, provides both kid-attractive healthy food choices and nutrition education. Using a collaborative approach to wellness policy implementation involving parents, the community, and the schools, which followed recommendations of the federal law, this team of stakeholders provided Houston with the ability to effectively implement the federally mandated student wellness policy (Satcher, 2010).

Role of the Principal in Wellness Policy Implementation

Spillane's concepts of interactive educational policymaking and sense-making support Lipsky's (1980) street-level bureaucrat model where the actions of the street-level bureaucrats drive policy (Spillane, Reiser, & Reimer, 2002). As the leader of the street-level bureaucrats in the school, the principal plays a critical role in all aspects of policy. The principal interacts with policy from the top-down perspective and from the bottom up at the street level during implementation (Jerald, 2005).

The principal's understanding of the relationship between policy intent and policy outcomes is an important first step to implementation. The principal must know, understand, and evaluate the demands of policy in light of his or her own prior understanding and background experiences to construct his/her own meaning of the policy's intentions (Spillane, 2000). When initiating the implementation process, the principal must communicate the policy's intentions and how its implementation complements and benefits the mission and vision of the school (Jerald, 2005).

From a top-down perspective, principals must be informed and understand federal laws and their subsequent policies and consider all aspects of compliance. In order to have an integrated, cohesive response to policy requirements, principals must detail the policy intentions to other street-level bureaucrats who will implement the policy (Hope & Pigford, 2001). As policies are more likely to be embraced when they do not substantially conflict with fundamental pedagogical beliefs and are in line with accepted concepts of teaching and learning (Hope & Pigford, 2001), principals must prepare for conflicts that may occur between the demands of the new policy's implementation and existing norms, habits, and practices of the school as well plan for the barrier of insufficient knowledge (Jerald, 2005). During implementation, local school conditions are redefined or adapted to fit the policy or the policy becomes what fits local conditions (McLaughlin, 1987). Adaptation of policy is a negotiation process and it is the principal's responsibility to lead negotiations to determine what policies will mean for their schools (McLaughlin, 1987).

Principals must recognize the importance of additional factors that influence the acceptance and implementation of policy. In addition to street-level bureaucrats in the school, community attitudes, the availability of resources and time also influence the implementation of

policy (McLaughlin, 1987). Principals must be prepared for the interaction of all influences and for different interpretations and responses to policy and lead the negotiations during the adaptation process. The principal must keep in mind that policymakers often view local adaptations of policy as threats to fidelity, which highlights the importance of the principal leading negotiations to ensure collaboration and successful implementation (Jerald, 2005, McDonnell & Probart, 2008).

The Applied Research Division of the National Food Service Management Institute (NFSMI) conducted a study to determine the intentions and readiness of principals to implement local wellness policies based on their assumption that principals played a key role in implementation. Using survey methodology, researchers evaluated readiness to implement by identifying and analyzing knowledge levels, confidence levels, and principals' perceptions regarding the benefits and barriers to wellness policy implementation (Molaison, Carr, & Hubbard, 2007).

NFSMI found the majority (80%) of the principals surveyed had knowledge of the federal mandated policy. The principals were found to have the most knowledge regarding physical education curricular components and felt some degree of confidence scheduling for physical activity. The principals defended the elimination of sugary drinks in food service and vending as a benefit, but saw the loss of revenue as an obstacle along with their concern that funding would not be provided by the school division. Additional obstacles principals cited were the challenge of changing foods served in the cafeteria and gaining community support for both the changes in scheduling and food options. Most principals believed, however, that the wellness policy implementation would benefit the health of students (Molaison et al., 2007).

Active Living Research What's Working Project conducted in Colorado summarized principals' concerns as lack of knowledge, time, and ability to "champion" the wellness cause and the barrier presented by a lack of funds to implement. It was found that while the principals recognized the need, importance, and the intent of CNRA to improve student wellness, they feared misunderstanding of their roles in implementation could present an area in which they were cited for a lack of accountability and leadership (Belansky, Cutforth et al., 2009).

Principals stated that academic achievement was a higher priority than nutrition and physical activity due to the high stakes associated with achievement (Belansky, Cutforth et al., 2009).

While acknowledging the benefit of enhancing wellness opportunities for students through nutrition education and physical activity, principals list competing priorities for school time as a significant barrier to implementation of wellness policies. Principals struggle to balance time needed to incorporate wellness policies within the demands of instructional programming fearing their plates are already too full to take on another objective (Bisceglie, 2008; Longley & Sneed, 2008). Principals view that there is not enough time in the day to enhance curricula for health, nutrition, and physical education with the priority of meeting the requirements of core academic instruction, which come with sanctions if mandates for higher achievement are not realized (Agron et al., 2010). To implement student wellness policies, providing students with sound bodies along with sound minds, schools must determine how to provide physical activity time, physical education along with the core academics (Ballard et al., 2005).

Wellness Policy Implementation in Virginia

In Virginia, the Board of Education wrote regulation in response to the CNRA Act. The language of the superintendent's regulation memorandum promoted the importance of schools in

combating problems associated with poor nutrition and inactivity in children. The regulation memorandum written by the state superintendent of public instruction in May 2005 issued the policy requirements for the creation of local school wellness policies in each school division in Virginia (Virginia Department of Education, 2005). The regulatory memorandum restated the federal law's five major components required for local school wellness policies and that the policies were to be implemented in all Virginia schools beginning with the 2006-2007 school year.

In 2007, a study was completed to examine proposed local school wellness policy goals in Virginia (Serrano et al., 2007). With every school division contacted, a total of 92 responded, representing 69.7%. The survey consisted of four main categories: nutrition education, physical activity, nutrition standards, and other school-based wellness activities. According to survey results, many school divisions anticipated adopting ambitious policies. The results showed a mean of 5.7 goals out of 11 possible for food and nutrition guidelines, 3.7 goals out of 9 physical activity guidelines, and 2.5 goals out of 4 nutrition education guidelines. Nonrural school divisions reported a significantly higher number of goals compared to rural divisions with 5.4 goals versus 3.5 total goals (Serrano et al., 2007).

Nutrition education goals emphasized teaching with less emphasis on teacher training. Nutrition standards focused on developing guidelines for nutritional values of foods and beverages and for a la carte, vending machines, and concession stands. In addition, most schools established guidelines for food and beverage contracts, for foods and beverages available for class parties and celebrations, as well as recommendations limiting the use of food as rewards or punishment (Serrano et al., 2007).

Physical activity goals focused on recess requirements and physical activity opportunities outside of physical education. Goals associated with additional resources for physical activity opportunities (gym or outdoor space and more time devoted for physical education) were less accepted (Serrano et al., 2007).

In terms of evaluation of policies, most school divisions (89.1%) identified at least one goal to measure progress. Goals included collecting height/weight, calculating body mass index (BMI), and conducting surveys or interviews. This study found that school divisions had begun the process of making changes to incorporate and make improvements in student wellness. Funding, time constraints, and lack of training were named as barriers (Serrano et al., 2007).

The Virginia Department of Education, through the Governor's office, created an online Nutrition and Physical Activity Scorecard for use in Virginia schools to assist wellness policy implementation and to encourage competition among schools. This document, a component of the Healthy Virginians program, allows school divisions to align their school wellness policies with the requirements of Virginia, which are based on the federal law's requirements.

A subsequent superintendent's memo, written in March 2008, issued the requirement for school divisions to report on the status of their individual wellness policy implementation. The status of local school wellness policy implementation is included in the annual report to the Virginia School Health Advisory Board (SHAB), mandated by the Code of Virginia to be submitted annually by each school division to the Department of Education (Virginia Department of Education, 2008).

In the annual report of Virginia School Health Advisory Boards, which school divisions submitted for the 2009 school year, 29.5% of school divisions mentioned student wellness initiatives among their accomplishments. The accomplishments submitted included revisions of

student wellness policies, increased attention to nutritional standards within the food service operations, increasing fruits and vegetables in the lunch program, and participation in farm to school lunch programs, and prohibiting fast foods in school cafeterias. School divisions reported an increased emphasis on the role of physical activity in student wellness and student achievement, as well as increased participation in the Governor's Scorecard and the Healthy Virginians program (Virginia School Health Advisory Board, 2010).

A study involving 500 elementary schools in Virginia examined the effects of decreasing times for physical education, music, and art in the school day on academic performance. In an attempt to comply with another federal policy to increase student achievement, schools reduced or eliminated time on nonacademic content areas to prioritize time for academics. However, an academic achievement was not seen. In addition, studies in Virginia have shown that when students participate in increased physical education as proposed by wellness policies, achievement is positively affected (Satcher, 2010).

CHAPTER 3. RESEARCH DESIGN AND METHODOLOGY

The purpose of this study was to examine fidelity of local implementation of a federally mandated educational policy. Local school wellness policies mandated by CNRA of 2004 were the vehicle for this examination. The fidelity of local policy implementation was determined by comparing components of local wellness policies in Virginia to mandates of federal law written in 2004 through an analysis of the comprehensiveness and strength of language written in the policies. Policy implementation was further analyzed by investigating elementary school implementation of wellness policies through analysis of responses from principals to a survey reporting on wellness policies and practices in their schools. By examining the principals' perspective of local school wellness policy implementation and through the identification of practices in place with regard to promotion of lifelong healthy eating and fitness habits, the extent of implementation of student wellness policies was determined.

The study was a 2-phase nonexperimental design using quantitative research methods with two research questions.

Research Questions

Phase I

1. Are Virginia school division wellness policies consistent with federal requirements mandated by Child Nutrition Reauthorization Act (CNRA)?
 - a. To what extent are Virginia school division wellness policies comprehensive, as measured by the School Wellness Policy Evaluation tool?

- b. What is the strength of Virginia school division wellness policies as measured by the School Wellness Policy Evaluation tool?
- c. Are there differences in comprehensiveness and strength of wellness policies by size, geographic region, or percentage of free and reduced lunch qualifications?

Phase II

- 2. To what extent do elementary school principals report implementation of their division's local wellness policy?
 - a. To what extent are federal requirements for local school wellness policies implemented in Virginia elementary schools?
 - b. Are there differences in implementation practices by school division size, geographic region, or percentage of free and reduced lunch qualifications?

Definition of Terms

Definitions relative to this study's purpose and understanding include the following:

Fidelity – refers to the extent wellness policies and implementation practices reflect the protocol of guidelines of the federal government.

Comprehensiveness—refers to the number of the recommended policy items mentioned in the division wellness policy and is represented in a proportion to the total number of recommended policy items.

Strength—refers to the number of items stated in the policy using strong language that provides clear direction for implementation of the wellness standard.

Phase I. Content Analysis of School Division Wellness Policies

Phase I. Sample Selection

In the first phase, local school wellness policies from school divisions in the state of

Virginia served as the sample. All divisions have wellness policies and it was possible to identify and access the entire sample. To ensure that inferential statistics used were reliable, a sample size of 100 was drawn using a stratified random sample from 132 Virginia's school divisions' wellness policies.

$$s = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size. (132)

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d^2 = the degree of accuracy expressed as a proportion (.05).

$$100 = \frac{(3.841)^2 (132)(.50)(1-.50)}{(.05)^2 (132-1) + (3.841)^2 (.50)(1-.50)}$$

(Krejcie and Morgan, 1970)

Phase I. Instrument

The School Wellness Policy Evaluation tool is a protocol developed by the Rudd Center for Food Policy and Obesity at Yale University and funded by the Robert Wood's Foundation. The Rudd Center designed, developed, and piloted the checklist in the fall of 2006 with the purpose of testing and evaluating properties of a coding system for student wellness policy evaluation. The School Wellness Policy Evaluation tool provided a standardized method for quantitative assessment of local school wellness policies (Schwartz et al., 2009).

The coding system of the School Wellness Policy Evaluation tool is 96-item checklist that reviews student school wellness policy within seven domains of wellness standards. The

wellness standards are based on the specified requirements of federal law in CNRA and include the following: nutrition education, nutrition standards for USDA child nutrition programs and school meals, nutrition standards for competitive and other foods and beverages sold in schools, physical education, physical activity, communication and promotion, and evaluation (Schwartz et al., 2009).

The School Wellness Policy Evaluation tool was tested in a study that examined wellness policies from a convenience sample of local school wellness policies from the states of Connecticut, Minnesota, Pennsylvania, and Washington. The School Wellness Policy Evaluation tool, also known as the Comprehensive Coding System to Measure the Quality of School Wellness Policies, was designed to collect quantitative data to determine the comprehensiveness of policies as well as to identify the policy strength. Each of the seven standard domains are coded separately for comprehensiveness and strength and the resulting subtotals are combined for a total comprehensiveness score and strength score for each of the wellness policies of the divisions included in this study (Schwartz et al., 2009).

Construct validity refers to the ability of a data collection instrument to measure and gather the data it states that it was constructed to collect (Mitchell & Jolly, 2007). To assess the construct validity of the School Wellness Policy Evaluation tool, the range and variability of the domain scores in the seven domains, along with the total comprehensiveness and strength scores for each of the policies were examined. The instrument was shown to provide scoring data to rank wellness policy components along a continuum that reflected overall quality. The study concluded the School Wellness Policy Evaluation tool to have construct validity (Schwartz et al., 2009).

Reliability of the School Wellness Policy Evaluation tool was determined in its original study by having pairs of researchers code a sample of the state student wellness policies. The domains were deemed internally reliable, Cronbach's alpha = .60 to .93. Inter-rater reliability scores were found to be adequate with intra class correlation coefficients of .82, .70, and .72 (Schwartz et al, 2009). Further research studies have been conducted on the use of the School Wellness Policy Evaluation tool and found it to be both practical and systematic in the evaluation of student wellness policies (Schwartz et al., 2009).

Phase I. Data Collection

Because it was shown to have good reliability, and construct validity, I chose the School Wellness Policy Evaluation tool for the data collection instrument for this study. The wellness standards included in the instrument reflect the federal government's required components as well as Virginia's regulatory requirements for school division wellness policies.

School division wellness policies were retrieved from school division websites accessed through the Virginia Department of Education. Each wellness policy was reviewed and coded twice for stronger reliability using the School Wellness Policy Evaluation tool. The School Wellness Policy Evaluation tool includes a detailed guide to explain the mechanics of the coding process and served as reference for coding. Scores were documented on the 4-page School Wellness Policy Score Sheet. A copy of this tool can be found in Appendix A.

The School Wellness Policy Evaluation tool lists 96 policy items within seven domains or standards of wellness. To code each wellness policy, the policy content was read and reviewed to determine how many and which of the 96 policy items were included. The wellness

policies were coded in seven domains of wellness policy standards. The domains and the number of policy items are displayed in Table 1.

Each policy item is coded by assigning 0, 1, or 2 based on whether the policy item is included in the wellness policy. A 0 denotes that there is no mention of the policy item in

Table 1

School Wellness Policy Items by Wellness Standard

| Wellness standard | No. of policy items |
|---|---------------------|
| Nutrition education | 9 |
| Standards for USDA child nutrition programs and school meals | 13 |
| Nutrition standards for competitive and other foods and beverages | 29 |
| Physical education | 17 |
| Physical activity | 10 |
| Communication and promotion | 12 |
| Evaluation | 6 |

the policy. A 1 is used if the topic is mentioned in the policy. A policy item is coded with a 2 if the topic is addressed specifically and directly with a strong statement about implementation.

When coding the wellness policies, a 1 is assigned if the policy item is mentioned as a statement in the wellness policy but is written as suggestions or recommendations. Words often used include: may, can, could, should, encourage, suggest, urge, make an effort, and try. To receive a coding of a 2, the statements in the wellness policy were written with strong language clearly stating the intent of the policy item with plans and/or strategies included. Specific words to look for include: will, must, have to, require, all, comply, and enforce. To calculate the

comprehensiveness score for each wellness standard, the number of policy items coded with a 1 or a 2 is divided by the total number of items and multiplied by 100. The number of policy items in a wellness policy in each domain/wellness standard coded with a 2 is divided by total number of domain policy items and multiplied by 100 to determine the strength score of the domain. Each wellness policy had seven comprehensiveness scores and seven strength scores. To determine the wellness policy's total comprehensiveness, the total number of policy items in all seven domains coded with 1 or 2 is counted. This number is divided by 96 (the total number of policy items) and multiplied by 100. The total strength score is determined for each policy by dividing the number of items from all domains coded with a 2 and multiplying that number by 100.

Demographics for the school divisions were downloaded from the Virginia Department of Education's website. Demographic data accessed for this study include school division populations, geographic designations of school divisions, and the percentages for student qualifications for free and reduced lunch. This information was downloaded from the website for this study in December 2013.

Phase I. Data Analysis

The data set for Phase I included the comprehensiveness and strength scores for each wellness standard and the total comprehensiveness and strength scores for the school division wellness policies in addition to demographic data for the school division. Demographic data for the school divisions were converted into categorical numeric variables in order to perform descriptive statistics.

Descriptive statistics were run to calculate means for the comprehensiveness and strength scores. Comparing mean scores through *t*-tests and ANOVA provided the statistical information regarding differences in the content of school division wellness policies and any significant differences in means between demographic groups in Virginia relative to division size, geographic region, or percentage of student qualification for free and reduced lunch. Post ad hoc multiple comparisons were run for ANOVA outcomes to determine where significant differences occurred. Eta-square was used to determine if statistically significant differences were also meaningful. Table 2 depicts instrumentation and analyses of data for Research Question 1.

Table 2

Research Question 1. School Division Wellness Policies

| Research Question | Instrument | Analysis |
|---|--|------------------------|
| 1. Are Virginia school division wellness policies consistent with federal requirements mandated by CNRA? | School wellness policy evaluation tool checklist | |
| a. To what extent Virginia school division wellness policies comprehensive, as measured by the School Wellness Policy Evaluation tool? | | Descriptive statistics |
| b. What is the strength of Virginia school division wellness policies as measured by the School Wellness Policy Evaluation tool? | | Descriptive statistics |
| c. Are there differences in comprehensiveness and strength of wellness policies by size, geographic region, or percentage of free and reduced lunch qualifications? | | ANOVA |

Phase II. Principal Survey of Wellness Policy Implementation

Phase II. Development of Survey

The survey used in Phase II was developed using the Governor's Nutrition and Physical Activity Scorecard. The Governor's Nutrition and Physical Activity Scorecard is modeled after the Healthy Schools Inventory from the Alliance for a Healthier Generation. Research-based practices supporting proper nutrition and increased physical activity recommended by Virginia Action for Healthy Kids, the Joint Committee of the Boards of Education and Health for the state of Virginia are incorporated into the Governor's Nutrition and Physical Activity Scorecard.

The best practices of the Governor's Nutrition and Physical Activity Scorecard were incorporated into a survey with 29 statements. Statements were organized into four standards. Physical activity listed wellness practices such as amount of time scheduled for physical activity and physical education, additional opportunities for movement and physical activity, and physical education instructional practices. Nutrition education listed collaboration between teachers and cafeteria staff, integration of nutrition education, and providing students additional opportunities for nutrition education. The category of nutritional food standards listed statements regarding confidentiality in the school meal program, nutritional value of foods, school celebrations, and fundraising. For the communication and promotion, the survey listed adults as role models for healthy eating, partnerships, and wellness messages communicated to parents.

Phase II. Sample Selection

The purpose of Phase II was to examine the extent of implementation of standards and practices of wellness policies in elementary schools. Principals were chosen to provide the data

for this study because of their roles as instructional leaders in the school and their responsibility to oversee policy implementation.

Contact was made with the director of the Virginia Association of Elementary School Principals to ask for assistance with survey distribution. The director agreed to distribute the invitation letter to the principals via e-mail to the membership of the association. The initial e-mail included a short forward from the director followed by my invitation to participate in the study with a link to the survey on Survey Monkey® (see Appendix B). The first e-mail was sent on October 31, 2013.

On November 9, 2013, a second request was made for participation and on December 12, 2013, a third request was e-mailed. There were 144 responses, which is 22% of the principal membership. In order to be certain that my inferential statistics could be reliably interpreted, I needed responses from 286 principals. To make sure that there was no non-response bias, I needed returns from 80% of those sampled. Because I was unable to meet these criteria, my response rate should be considered a limitation of my study.

$$s = \frac{X^2 NP(1-P)}{d^2 (N-1) + X^2 P(1-P)}$$

s = required sample size.

X² = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size. (1,189)

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d² = the degree of accuracy expressed as a proportion (.05).

$$289 = \frac{(3.841)^2 (1189)(.50)(1-.50)}{(.05)^2 (1189-1) + (3.841)^2 (.50)(1-.50)}$$

(Krejcie & Morgan, 1970).

Phase II. Data Collection

The demographic information principals provided in Part 1 of the surveys was organized into categories in the data set. Student populations were labeled into three groups describing school size as small, average, or large. Principals provided information to group schools by geographic regions rural, suburban, or urban. Responses to percentage of free and reduced lunch were also divided into three groups of ranges. The ranges were selected in consideration of Virginia's average for free and reduced qualifications (40%) and the qualification percentages used to determine distribution of federal funding. The three groups for free and reduced lunch qualification were 0% to 39.99%, which receive little no federal funding, 40% to 55.99%, targeted assistance, and 56% to 100% which receive levels of schoolwide assistance.

The response choice to the wellness statements in Part 2 were given values as follows: *fully in place 4, partially in place 3, in development 2, and not in place 1*. With each response having a value, a wellness policy implementation score was calculated for each principal by determining the sum of their responses to all statements.

In some cases, cells were blank indicating the respondent had skipped the question. These missing data were addressed by case mean substitution. For any case with empty cells and missing data, the mean for the individual response set was filled in for cell of the missing response. Research on missing data suggests case mean substitution as a recommended alternative to list deletion as substitution of the mean of response is a better estimation of the missing response than substitution of the mean of all responses for that variable. Substitution allows retention of the sample size and recommended for the construction of scale scores (Raymond, 1986).

Fourteen of the respondents stopped the survey after completing Part 1. Because there were no data for Part 2, these cases were discarded and not used in the analysis.

Phase II. Data Analysis

A one-way ANOVA was run to determine if there was a significant difference in the scores among the groups for school size, for geographic region, and percentage of reduced lunch qualifications. For each response, the survey allowed respondents to add comments elaborating on their answer statement. These comments provided additional information in terms of specific implementation practices in place in regard to student wellness.

The data analysis was summarized to detail the extent that school wellness policies are being implemented in the elementary schools in the state of Virginia. Table 3 depicts instrumentation and analyses of data for Research Question 2.

Table 3

Research Question 2. Wellness Policy Implementation

| Research Question | Instrument | Analysis |
|--|------------------|------------------------|
| 2. To what extent do elementary school principals report implementation of their division's local wellness policy? | Principal survey | |
| a. To what extent are federal requirements for local school wellness policies implemented in Virginia elementary schools? | | Descriptive statistics |
| b. Are there differences in implementation practices by school division size, geographic region, or percentage of free and reduced lunch qualifications. | | ANOVA |

Analysis of construction and content of policies and the responses from elementary school principals regarding the actual implementation provide a snapshot of wellness policy implementation in Virginia. The consolidated data from both phases lead to a summary of the fidelity to federal law requirements for local school wellness policies and implementation of these policies currently in place.

CHAPTER 4. FINDINGS

The data for this survey were collected in two phases. Phase I was a content analysis of Virginia school division wellness policies. Principal survey responses are the data for Phase 2. Data for each phase will be presented, discussed and summarized separately.

The data from both phases will be synthesized into a summary of wellness policy implementation.

Phase I

Virginia wellness policies were analyzed to determine the extent of fidelity to the federal requirements of the CNRA by determining comprehensiveness and strength of the policies. School division wellness policies from 129 school divisions were coded for comprehensiveness and strength in the following areas: nutrition education, standards for USDA child nutrition programs and school meals, nutrition standards for competitive and other foods and beverages, physical education, physical activity, communication and promotion, and evaluation. The content analysis resulted in comprehensiveness and strength scores in the seven individual wellness standards and total comprehensiveness and strength scores for each school division wellness policy.

Research Question 1

Are Virginia school division wellness policies consistent with federal requirements mandated by CNRA?

a. To what extent are Virginia school division wellness policies comprehensive, as measured by the School Wellness Policy Evaluation tool?

The coding system scores from 1 to 100 for comprehensiveness and strength of the wellness policy. Each policy item is coded on a scale from 0 to 2 where 0 represents no mention of the policy item, 1 represents the policy item as mentioned with weak or vague language using terms such as suggest or encourage, and items coded 2 are more specific using terms such as shall and will, and link an action for implementation to the policy item.

Comprehensiveness refers to the number of policy items coded with a 1 or 2 included in the policy. Items coded with a 1 or 2 are policy items written in the policy. Out of the possible score of 100 for total comprehensiveness, Virginia school divisions had a mean of 47.67, SD = 16.31 and a median score of 47. This would indicate roughly 48 or half of the 96 policy items are written into Virginia division wellness policies. The minimum score for comprehensiveness was 8, with 8 out of 96 policy items mentioned in the policy. The maximum score for comprehensiveness of 89 indicates that at least 85 policy items were included in the wellness policy (see Table 4).

Table 4

School Division Wellness Policy Mean Ratings for Comprehensiveness and Strength

| | Mean | Median | SD | Minimum | Maximum |
|-------------------|-------|--------|-------|---------|---------|
| Comprehensiveness | 47.67 | 47.00 | 16.31 | 8 | 89 |
| Strength | 30.86 | 26.00 | 16.95 | 5 | 75 |

a. What is the strength of Virginia school division’s wellness policies as measured by School Wellness Policy Evaluation tool?

While comprehensiveness is measured by the number of policy items mentioned in the policy, the strength refers to the degree of specificity and the clarity used to state the policy items the policy includes. The strength score is determined by counting the number of policy items coded with a 2. Policy items coded with a 2 use terms such as will, enforce, and require. Like comprehensiveness, the highest score possible for strength was 100 meaning the wellness policy included 100% of the 96 policy items written with specific language clearly stating implementation strategies. The lowest raw score for total strength of a school division policy was 5 and the highest strength score was 75. The mean score for strength for Virginia school division wellness policies is $M = 30.86$, $D. = 16.95$, median 26.00 as listed in Table 4.

b. Are there differences in comprehensiveness and strength of wellness policies by school division size, geographic region, or percentage of students in the school division qualified for free and reduced lunch?

School division size. The school divisions in Virginia have student populations ranging from 200 to over 179,000 students labeled as small, average, above average, large, and very large. For this study the school divisions were coded in three groups as small, average, and large. Thirty-six percent (46) school divisions were small with a student population of less than 2,400 students. Thirty-two percent (41) of the school divisions were average size of 2,401 and 5,600 students. Large school divisions serving more than 5,600 students made up 33% (42) of the school divisions in the study. The means for total comprehensiveness and strength in division policies by school division size are found in Table 5.

The means for comprehensiveness and for strength were compared using a one-way ANOVA to determine statistically significant differences in scores among the groups based on

Table 5

Division Comprehensiveness and Strength Means by School Division Size

| No. of students | Mean | SD | Minimum | Maximum |
|---------------------------|-------|-------|---------|---------|
| Comprehensiveness: | | | | |
| 5,601-200,000 - Large | 50.83 | 20.41 | 8.00 | 89.00 |
| 2,401-5,600 - Average | 49.41 | 14.60 | 17.00 | 86.00 |
| 1-2,400 - Small | 43.24 | 12.48 | 24.00 | 77.00 |
| Strength: | | | | |
| 5,601-200,000 - Large | 37.95 | 20.01 | 5.00 | 75.00 |
| 2,401-5,600 - Average | 30.12 | 14.70 | 10.00 | 74.00 |
| 1-2,400 - Small | 25.04 | 13.34 | 9.00 | 70.00 |

school division size. There was no statistically significant difference in comprehensiveness by size of division ($F(2,126)$ and $p = .065$).

However, there was a statistically significant difference in means for strength by school division size ($F(2,126) = 7.031, p = .001$). To determine which means were significantly different, post hoc multiple comparison tests were run. Tukey and Scheffe tests both indicate a difference in strength scores between small and large school divisions significant at $p = .001$ with no significant differences between average sized school divisions and small school divisions or average sized school divisions and large school divisions. When differences were examined between means for small and large school divisions for practical significance, eta squared was .13. This measure of association tells us that 13% of the difference between small and large school division wellness polices is associated with the school division size (Table 6).

Geographic region. School divisions in Virginia are categorized into four geographic regions. Sixty percent of the school divisions are in rural areas of Virginia, 15% are towns, 13% are suburban, and 12% are small or large cities. The means for strength and comprehensiveness by geographic region are displayed in Table 7.

Table 6

One-Way Analysis of Variance Based on School Division Size

| School division size | | df | F | <i>p</i> | eta | eta ² |
|----------------------|----------------|----|--------|----------|------|------------------|
| Small: | | | | | | |
| 1 - 2,400 | Between groups | 1 | 12.876 | .001 | .361 | .130 |
| | Within groups | 86 | | | | |
| Large: | | | | | | |
| 5,601 - 200,000 | Total | 87 | | | | |

To determine if there were differences by geographic location of the school division, I compared means using a one-way ANOVA. I found no statistically significant differences in the means for comprehensiveness. However, there was a statistically significant difference in the strength scores (Table 8).

Table 7

Division Comprehensiveness and Strength Means by Geographic Region

| Geographic region | Mean | SD | Minimum | Maximum |
|---------------------------|-------|-------|---------|---------|
| Comprehensiveness: | | | | |
| City (small or large) | 57.50 | 18.11 | 35.00 | 86.00 |
| Suburban | 49.29 | 18.27 | 11.00 | 89.00 |
| Rural | 46.46 | 16.12 | 8.00 | 82.00 |
| Town | 44.11 | 10.67 | 17.00 | 57.00 |
| Strength: | | | | |
| City (small or large) | 45.66 | 16.95 | 22.00 | 74.00 |
| Suburban | 35.41 | 17.10 | 10.00 | 75.00 |
| Rural | 28.06 | 16.18 | 5.00 | 73.00 |
| Town | 25.74 | 9.25 | 14.00 | 49.00 |

Because there was a significance in the difference in means for strength among the groups, $F(3, 125) = 6.423$ and $p = .000$, follow up post hoc multiple comparisons tests were performed. Both Tukey and Scheffe tests indicate statistically significant difference between rural and city regions ($p = .00$) and a difference between towns and cities ($p = .00$).

I then explored the differences between rural and city regions finding eta squared $\eta^2 = .137$. The eta squared for the difference in mean scores between school divisions in towns and school divisions in cities was $\eta^2 = .319$. For practical purposes, this would suggest that the 14% of the difference can be contributed to geographic region when comparing means for rural geographic regions to city regions, and 32% of the effect can be associated with geographic location in the comparison of the means of towns and cities. This is displayed in Table 8.

Table 8

One-Way Analysis of Variance Based on School Division Geographic Location

| Geographic location | | df | F | p | eta | eta ² |
|---------------------|----------------|----|--------|------|------|------------------|
| Rural | Between groups | 1 | 14.394 | .000 | .370 | .137 |
| | Within groups | 91 | | | | |
| City | Total | 92 | | | | |
| Town | Between groups | 1 | 15.485 | .000 | .565 | .319 |
| | Within groups | 33 | | | | |
| City | Total | 34 | | | | |

Free and reduced lunch qualifications. In the state of Virginia, 40% of the student population qualifies for the free and reduced lunch program. For this study, school divisions were put into one of three groups according to the school division's percentage of students qualifying for free and reduced lunch. In the state, 33% of school divisions have from 0% to 39.99% of students qualifying for free and reduced lunch. In 30% of school divisions 40% to 55.99% of students qualify, and 36% of the school divisions have between 56% and 100% of students qualifying for the free and reduced lunch program. Table 9 displays the means for strength and comprehensiveness by percentage of free and reduced lunch students in the division.

A one-way ANOVA was used to determine if there were statistically significant differences in comprehensiveness and strength scores among the groups based on free and

Table 9

Division Comprehensiveness and Strength Means by Free and Reduced Lunch Qualifications

| % of qualifications | Mean | SD | Minimum | Maximum |
|---------------------------|-------|-------|---------|---------|
| Comprehensiveness: | | | | |
| Average - 40-55.99 | 49.38 | 15.53 | 19.00 | 86.00 |
| High - 56-100 | 47.57 | 16.29 | 17.00 | 82.00 |
| Low - 0-39.99 | 46.23 | 17.24 | 8.00 | 89.00 |
| Strength: | | | | |
| Average - 40-55.99 | 31.97 | 18.08 | 9.00 | 74.00 |
| High - 56-100 | 30.61 | 18.21 | 10.00 | 72.00 |
| Low - 0-39.99 | 30.12 | 14.65 | 5.00 | 75.00 |

reduced lunch percentages. No statistically significant differences were found among the groups for either comprehensiveness or for strength (Table 10).

Table 10

One-Way Analysis of Variance Based on Free and Reduced Lunch Qualifications

| % of qualifications | | df | F | p |
|---------------------------|----------------|-----|------|------|
| Comprehensiveness: | | | | |
| Low (0-40) | Between groups | 2 | .379 | .685 |
| Average (40-56) | Within groups | 126 | | |
| High (57-100) | Total | 128 | | |
| Strength: | | | | |
| Low (0-40) | Between groups | 2 | .129 | .879 |
| Average (40-56) | Within groups | 126 | | |
| High (57-100) | Total | 128 | | |

Wellness Standards: Comprehensiveness and Strength

The comprehensiveness and strength scores were determined by adding the totals of policy items within each of the seven standards coded with a 1 or a 2. The mean score for each standard was calculated. For each of the wellness standards the means for comprehensiveness were higher than means of the strength scores. Comprehensiveness means were highest in

nutrition education (M = 72.41, SD = 18.97), physical activity (M = 61.93, SD = 18.75), and evaluation (M = 62.19, SD = 18.67). The lowest mean for comprehensiveness was M = 34.24, SD = 22.84 for the standard other foods and beverages.

The wellness standards, which used the strongest language, were nutrition education with the highest mean (M = 57.19, SD = 27.19), and physical activity (M = 44.11, SD = 20.30). The lowest mean for strength was M = 18.96, SD = 23.31 for the physical education standard (Table 11).

Table 11

School Division Comprehensiveness and Strength Means for Standards

| Wellness standards | Mean | SD |
|-----------------------------|-------|-------|
| Comprehensiveness | | |
| Nutrition education | 72.41 | 18.97 |
| Evaluation | 62.19 | 18.67 |
| Physical activity | 61.93 | 18.75 |
| Communication and promotion | 53.85 | 21.82 |
| USDA meal standards | 47.78 | 20.29 |
| Physical education | 40.16 | 20.75 |
| Other foods and beverages | 34.24 | 22.84 |
| Strength | | |
| Nutrition education | 57.19 | 21.79 |
| Physical activity | 44.11 | 20.30 |
| USDA meal standards | 38.98 | 20.43 |
| Evaluation | 28.22 | 25.07 |
| Communication and promotion | 26.79 | 21.37 |
| Other foods and beverages | 23.47 | 20.35 |
| Physical education | 18.96 | 23.31 |

Wellness Policy Implementation Standards

The Child Nutrition and WIC Reauthorization Act mandated student wellness policies and established requirements for the policies to promote student health and wellness and reduce childhood obesity by addressing nutrition education and physical activity and with nutritional

guidelines for all foods available to students. The federal law requires the development of the wellness policy and promotion of student wellness to be a collaborative and on-going process involving communication among parents, students, school staff, and the public. Policies are required to have plans for monitoring implementation and plans for evaluation and revision. The comprehensiveness and the strength of the content of wellness policies in Virginia are described using the framework of seven wellness standards.

Nutrition education. CNRA requires goals for nutrition education designed to promote student wellness in a manner the school division determines appropriate. Nutrition education was the most comprehensive and strongest standard in the policies. Nutrition education in the Virginia wellness policies included objectives to teach behavior-based skills and utilize instruction that is participatory and interactive for all students. The policies address staff training for nutrition education instruction and the integration of nutrition into other school subjects beyond health and physical education. Curriculum, training and instructional strategies for nutrition education are mentioned in the policies but without specific details. Specifics are not given to address how and to what extent additional opportunities are provided for students for nutrition education. The policies mention coordinating nutrition education with the larger school community and extending nutrition education into the community but without requirements or strategies.

USDA meal standards. Policy items most often addressed for this standard were related to the promotion of school meal programs and the confidentiality of student access. Increasing student participation in the school meal programs, scheduling meal times for optimal nutrition, and the quality of the school meal environment were also addressed. Policies had specific

guidelines regarding the qualifications and training of the food services staff and for providing adequate time for students to eat school meals.

Other foods and beverages. Federal law requires wellness policies have a goal for to establish nutritional guidelines for all foods to promote student health and reduce childhood obesity. Policies recommend addressing the nutritional content of foods served a la carte, at class parties and during school celebrations as well as regulating food and beverages sold in vending machines, during before and after school events, and in fundraising. Wellness policies suggest limiting sugar, fat, and sodium content in all foods and beverages available to students. Wellness policies address fat content of milk and recommend that students have access to free drinking water. While the policies addressed nutritional guidelines and other foods, the policy items were only suggested and not required.

Physical activity. The federal government requires wellness policies to include physical activity goals to promote student wellness in a manner appropriate to the school division. Virginia wellness policies mention all students should have opportunities daily to be physically active with the goal of 150 minutes of physical activity per week. Daily recess for elementary students was mentioned in the policies. Policies encouraged integrating physical activity into academics and discouraged its use as a consequence for misbehavior. Schools should provide opportunities for students, families, and the community to use school facilities for family oriented physical activities. Policies mentioned establishing safe routes to school and planning physical activities for staff as future goals.

Physical education. Wellness policies state the overall goal for physical education should be to promote physically active lifestyles. The wellness policies address the availability of physical education for all students but did not reference details of the curriculum or how often

it would be taught. The policies mentioned that schools should have adequate equipment and safe facilities but did not qualify these statements. Qualifications for physical education teachers

Communication and promotion. The federal government's guidelines require wellness policies have goals to involve parents, students, and representatives from food service, school board, administrators, and the public in the development and the promotion of student wellness. Policies named parents as role models for healthy lifestyles and mentioned collaboration among families and the schools but did not explain the procedures or details of collaboration. The policies stated that schools would utilize a coordinated health model and that communication throughout the schools regarding nutrition would be consistent but did not give details or content. Marketing of healthy choices was an encouraged but not required practice in the wellness policies. Marketing of unhealthy choices was discouraged but not restricted. Health advisory committees at the school level were mentioned as future goals.

Evaluation. CNRA requires school division wellness policies to establish plans for measuring implementation. Virginia wellness policies include mention of evaluation plans and name a person or group responsible for overseeing implementation. However, the evaluation plans are not explained and revision procedures rarely mentioned. Resources and funding were not mentioned in the policies.

Phase I. Summary

School divisions in Virginia used a common template to write their student wellness policies. Following the structure of this template, the wellness policies include introductory policy statements, goal statements for nutrition promotion and education, physical activity, other school-based activities, nutrition guidelines, and a statement regarding policy evaluation. Using the same template, many of the school division wellness policies were almost identical. While

many of the school divisions incorporated only the minimum requirements, a small number of the school divisions elaborated on policy statements, outlined details and specific objectives for each standard, and defined procedures for implementation of the policy. Differences in the extent to which school divisions expanded the template to write their policies resulted in policies varying in length from one page to multiple pages based on the differences in comprehensiveness and strength.

The template was made up of general statements reflecting the requirements of the federal government for wellness policies. It could be completed by a school division for its wellness policy without adding too much more information than the school division name. The comprehensiveness and strength of these policies were rated low by the School Wellness Policy Evaluation tool.

The more comprehensive policies personalized and expanded the template with additional content for each of the requirements and wellness standards. The stronger policies expanded the template by detailing expectation of practice for each of the wellness standards. These policies were written to provide structure to implementation with specific requirements for schools to follow. The stronger wellness policies detailed numerous strategies to promote student wellness in the areas of nutrition and physical activity. The stronger policies outlined the procedures to implement wellness policies and explained how student wellness would be communicated and promoted in the school division.

Phase II

For the second phase of my study, I surveyed Virginia elementary school principals regarding implementation of wellness practices. For Part 1 of the survey, principals provided basic demographics of their particular schools including school size based on student population,

geographic location, and the percentage of students in their schools qualifying for the free and reduced lunch program.

Part 2 of the survey, modeled after the Governor's Nutrition and Physical Activity Scorecard, was developed in Virginia in 2006 and consisted of a series of statements regarding components of wellness implementation practice and promotion. Principals responded to these statements to report the extent to which these wellness policy implementation practices were in place in their schools.

Research Question 2

To what extent do elementary school principals report implementation of their division's local wellness policy?

- a. To what extent are federal requirements for local school student wellness policies implemented in Virginia elementary schools?

Wellness policy implementation practices in place. Principals responded to wellness policy implementation practice statements from the Governor's Nutrition and Physical Activity Scorecard that represented components of local school division wellness policies. Responses from principals indicate that 14 of the 29 wellness policy implementation practices in the survey were fully or partially in place. Table 12 lists the wellness policy implementation practices and the percentage of schools where principals respond implementation of the practice is fully or partially in place. Wellness policy implementation practices are listed by the percentage of principals responding full implementation with the wellness policy implementation practice with the highest percentage of implementation listed first.

Table 12

Wellness Policy Implementation: Practices in Place

| Wellness policy implementation practice | % in place Fully | % in place Partially |
|---|---------------------|-------------------------|
| Students have adequate time to eat meals. | 98 | 1 |
| Only low-fat or nonfat milk is served. | 93 | 3 |
| Reimbursable meal program serves a variety of foods. | 93 | 2 |
| Physical education instructional practices for maximum participation of every student. | 91 | 7 |
| Computerized meal counting protects student identity. | 90 | 3 |
| Offer v. serve requirement provides students with a nutritionally balanced meal. | 88 | 9 |
| Water is readily available at all times for students. | 86 | 8 |
| Physical education practices are inclusive. | 83 | 16 |
| Reduced-fat choices are offered to students. | 81 | 14 |
| Students are moving 90% of the time in physical education class. | 70 | 21 |
| Adequate equipment for all students to be active during recess and in physical education classes. | 70 | 21 |
| The only snacks for sale are less than 300 calories. | 62 | 26 |
| Snacks are low in fat and saturated fat. | 58 | 19 |
| Students have opportunities for additional physical activity. | 45 | 37 |

Wellness policy implementation practices in development or not in place. Of the 29 statements, 15 of the wellness policy implementation practices were reported by principals, not in place or in development. Table 13 lists the wellness policy implementation practices

reported by principals not in place or in development in the schools. Listed first is the wellness policy implementation practice reported by the highest percentage of principals as not in place.

Table 13

Wellness Policy Implementation: Practices Not in Place

| Wellness policy implementation practice | % not in place | % in development |
|---|----------------|------------------|
| Active nutrition committee. | 60 | 12 |
| Thirty minutes of recess. | 38 | 5 |
| Adults as role models for students during meals. | 37 | 16 |
| Minimum standards for fundraising. | 35 | 23 |
| Physical education for at least 150 minutes per week. | 32 | 4 |
| Additional nutrition education. | 28 | 28 |
| Posting nutrition messages to website. | 27 | 27 |
| Feedback technologies and student-centered approaches. | 27 | 12 |
| Partnerships with the community for wellness. | 25 | 26 |
| Staff collaboration for nutrition education. | 25 | 25 |
| Integration of nutrition and physical education into core. | 22 | 15 |
| Participation in extracurricular activities. | 21 | 20 |
| Minimum nutritional standards for celebrations, snacks, treats. | 19 | 18 |
| Regular communication to parents of nutrition. | 17 | 23 |
| Physical activities for students and families. | 16 | 14 |

The 29 wellness policy implementation practices reflect the wellness standards. Table 14 displays total possible scores for the standards and the percentage the standard was reported implemented. The standard for nutritional foods was reported as the highest percentage of implementation. Communication and promotion had the lowest percentage of the practices implemented.

Table 14

Percentage of Wellness Policy Implementation by Wellness Standards

| Wellness standard | Implementation | |
|--|----------------|----|
| | Possible score | % |
| USDA nutritional standards for all foods | 36 | 83 |
| Physical Education | 20 | 72 |
| Physical Activity | 20 | 43 |
| Nutrition education | 12 | 28 |
| Other Foods and Beverages | 8 | 25 |
| Communication and promotion of wellness | 20 | 19 |

- b. Are there differences in implementation practices by school size, geographic region, or percentage of free and reduced lunch qualifications?

Wellness policy implementation. Principal responses to the survey statements to report practices were used to calculate wellness policy implementation scores. In order to determine scores, the responses were assigned values 1 to 4. The response *fully in place* received a 4, the response *partially in place* was 3, *in development* was 2, and *not in place* was 1. The response values from each principal were summed to calculate a total wellness policy implementation score. For the highest score of 116, a respondent would have reported all 29 wellness practices

fully in place. The lowest score of 29 would indicate that none of the wellness practices were in place. The wellness policy implementation scores ranged from a high of 115 to the lowest wellness policy implementation score of 57. The mean score for wellness policy implementation for the total sample was 88.

Wellness policy implementation and school size. Principals provided the data on school size by choosing the range of student population that best described student enrollment count. Twenty-two percent of the principals stated their schools had fewer than 500 students, 47% of principals were in schools of 500 to 700 students, and 31% had a student population of over 700 students.

Principals from schools with over 700 students had a higher mean for wellness policy implementation with a mean score of $M = 90.24$, $SD = 10.81$. Principals in schools with less than 500 students had a mean $M = 88.32$, $SD = 12.30$, and the principals with 500 to 700 students had a mean wellness policy implementation score of 87.93 , $SD = 13.56$, slightly less than the wellness policy implementation mean for all principals in the sample. Table 15 displays the wellness policy implementation ranking of means by school size.

Table 15

Wellness Policy Implementation Ranking of Means by School Size

| Student population | Mean | SD |
|--------------------------|-------|-------|
| Over 700 students | 90.24 | 10.81 |
| Less than 500 students | 88.32 | 12.30 |
| Between 500-700 students | 87.93 | 13.56 |

A one-way ANOVA was used to compare means of wellness policy implementation scores to determine if there was any statistical difference among the groups by school size.

There was no significance found in the differences among the groups with $F(2, 126) = .444$ and $p = .643$ (see Table 16).

Table 16

One-Way Analysis of Variance Based on School Size

| Wellness policy implementation | | df | F | p |
|--------------------------------|----------------|-----|------|------|
| No. of students: | | | | |
| Small (under 500) | Between groups | 2 | .444 | .643 |
| Average (500-700) | Within groups | 126 | | |
| Large (over 700) | Total | 128 | | |

Wellness policy implementation and geographic region. Principals were asked to identify the geographic region in Virginia for their elementary schools as rural, suburban, or urban. The respondents were principals from 22% rural schools, 51% suburban, and 26% urban. The mean for wellness policy implementation for principals from rural Virginia was $M = 86.21$, $SD = 11.04$ which was lower than mean for the total sample (88). The wellness policy implementation mean was higher for the respondents from suburban areas at $M = 89.74$, $SD = 12.05$ and from urban areas $M = 89.03$, $SD = 14.09$ (see Table 17).

Table 17

Wellness Policy Implementation Ranking of Means by Geographic Region

| Geographic region | Mean | SD |
|-------------------|-------|-------|
| Suburban | 89.74 | 12.05 |
| Urban | 89.03 | 14.09 |
| Rural | 86.21 | 11.04 |

A one-way ANOVA was used to compare means of wellness policy implementation scores to determine any statistical difference among the groups by geographic region. With

wellness policy implementation as the dependent variable and geographic region as the independent variable, I found no statistically significant difference among the groups with $F(2, 126) = .829$, and $p = .439$ (see Table 18).

Table 18

One-Way Analysis of Variance Based on Geographic Location

| Wellness policy implementation | | df | F | p |
|--------------------------------|----------------|-----|------|------|
| Geographic region: | | | | |
| Rural | Between groups | 2 | .829 | .439 |
| Suburban | Within groups | 126 | | |
| Urban | Total | 128 | | |

Wellness policy implementation and free and reduced lunch qualifications.

Principals were to choose the range for the percentage of students qualifying in their schools for free and reduced lunch. Forty-seven percent of principal stated their student eligibility for free and reduced lunch in the 0 to 40% range. Thirty-nine percent of principals stated eligibility between 41 to 74%, and 15% of the respondents have student eligibility at 75% or above for free and reduced lunch.

Principals with the highest percentage of free and reduced lunch had the highest mean for wellness policy implementation ($M = 91.75$, $SD = 10.67$). Schools with 41 to 74% of the students qualifying for free and reduced lunch had the lowest mean of $M = 86.55$, $SD = 12.47$ for wellness policy implementation. The principals with the fewest number of students qualifying for free and reduced lunch had a mean for wellness policy implementation of 89.69 (Table 19).

A one-way ANOVA was used to compare means of wellness implementation scores to determine any statistical difference among the groups by free and reduced lunch qualifications. With wellness policy implementation as dependent variable and reduced lunch qualifications

Table 19

Wellness Policy Implementation Mean Ranking by Free and Reduced Lunch Qualifications

| Eligibility % | Mean | SD |
|---------------|-------|-------|
| 75 and above | 91.75 | 10.67 |
| Up to 40 | 89.69 | 12.67 |
| 41 to 74 | 86.55 | 12.47 |

the independent variable, I found no statistically significant difference among the groups with $F(2, 126) = 1.550$, and $p = .216$ (see Table 20).

Table 20

One-Way Analysis of Variance Based on Free and Reduced Lunch Qualifications

| Total wellness implementation | | df | F | <i>p</i> |
|-------------------------------|----------------|-----|-------|----------|
| Percentage: | | | | |
| Low (0-40) | Between groups | 2 | 1.550 | .216 |
| Average (40-56) | Within groups | 126 | | |
| High (57-100) | Total | 128 | | |

Principal Report of Wellness Policy Implementation Practices

Principals in Virginia were surveyed regarding wellness practices in place in their elementary schools. The survey wellness statements have been categorized to reflect the standards for physical activity and physical education, nutrition education, nutritional standards for all foods, and communication and promotion of wellness policies. The principals’ survey responses provide a snapshot of the extent wellness policy implementation is in place in elementary schools in the state of Virginia. Included in this summary are comments from principals, which provide further insight and explanation, regarding local implementation of school wellness.

Physical activity. The state of Virginia requires schools to provide 150 minutes of physical activity per week with a combination of physical education, physical activity integrated into the core curricula, and daily recess for elementary students. Virginia is reviewing this goal to consider changing 150 minutes of physical activity to 150 minutes of physical education per week for all students. Responses to the wellness statements for this standard suggest principals are prioritizing time for the physical activity standard for student wellness in their elementary schools in several ways.

The survey statements asked for responses regarding practices related to physical education. Two statements related to the instruction provided by physical education teachers. These responses revealed that physical education teachers are utilizing instructional strategies to maximize student participation and maximize student movement. Physical education instructional practices are inclusive with collaborative adaptive physical education programs reported.

The statement regarding amount of time for physical education revealed several different ways principals have scheduled 150 minutes of physical *activity* per week. Some elementary principals report scheduling physical education classes to meet two or three times a week instead of the traditional one 30-45 minute resource block to work towards the goal. Combining additional physical education time with daily structured and unstructured recess times brings the suggested goal amount of physical activity closer to 150 minutes per week. Upper grade level students receive more physical education than lower grade students where recess provides their time for physical activity rather than physical education. Thirty-six percent of principals responded that 150 minutes of physical education is not in place or is still developing. Principals

comment that additional funding would be needed for more physical education teachers to meet the goal of more physical education.

According to principal comments recess periods vary in length and by grade level and are affected by other school activities. Scheduling for recess ranged from 15 minutes to 30 minutes daily with students having less time for recess on shortened school days, in the upper grade classes, and on days when a class has physical education class. The reasons principals cited for having less time for recess included the time needed for transition and travel, and the time constraints of fulfilling the requirements of the standards of learning.

The majority of principals report adequate equipment available for all students to be physically active during recess and physical education.

Nutrition education. Nutrition is taught through the health and physical education curriculum in Virginia schools. The health curriculum includes a community wellness strand with an objective for students to apply wellness to their environment. Extension of nutrition education with opportunities for students to learn and apply nutrition outside of the core nutrition curriculum was reported as partially in place or in development. The integration of nutrition into other school subjects is only partially in place or in development. The use of feedback technologies and other student-centered approaches to learn about nutrition and physical education is fully in place in 28% of the schools, but for higher percentage (45%) this wellness implementation practice is only partially in place or in development.

CNRA recommends collaboration between food services and instructional staff for the extension of nutrition education. Principals respond that collaboration between cafeteria and teaching staff is a practice in development and only partially in place with some commenting the

time demand makes this practice unrealistic. Other principals commented on the collaborative whole school focus on nutritional food with participation in the *Farm to Table* program.

Nutritional standards. School meal programs are regulated by federal law and standards of the USDA. School meal programs must not be less restrictive than these nutritional standards. According to the principals, the school meal program offers appealing nutritionally balanced meals. Schools offer only low or nonfat milk and reducing fat content is considered in food preparation. Elementary students have an adequate amount of time to eat school meals, and water is reported readily available to students throughout the school day, including breakfast and lunch.

CNRA recommends that wellness policies extend USDA nutritional standards to all foods and beverages available to students in schools. Other foods and beverages available to students include a la carte choices and snacks sold in the cafeteria. School food service is highly regulated and principals commented having little or no control in the sales of snack items in the cafeteria. However, principals did respond that snacks and a la carte choices available in their school were less than 300 calories per item with no more than 30% calories from fat and no more than 10% from saturated fat as recommended by USDA standards.

Applying minimum nutritional standards to foods and beverages available to students during school celebrations, snacks, and treats reveals variation in practice. Some principals report their school divisions does not allow any food and beverages brought to school or allowed in the cafeteria outside of the school meal program. This was due in part to addressing food allergies. Over half of the principals report having nutritional requirements for snacks and treats partially or fully in place. Principals report it is suggested that minimum nutritional standards for

food be considered for food brought into schools for snacks, treats, and birthday celebrations but not required.

Fundraising is also included in the category of other foods and beverages available to students. One-third (35%) of the principals report their school fundraising does not limit the use of high fat food items. Principals comment fundraising typically occurs outside of school hours and under the direction of parent or community organizations. Because fundraising does not take place during school, principals report limited control to influence fundraising.

Communication and promotion. Responses to wellness statements regarding communication and promotion of student wellness reveal these practices are being implemented less often in schools. Sixty percent of principals respond that nutrition advisory councils are not in place in their schools. Having adults eat with students to model healthy eating habits was a wellness practice not in place for over a third of the principals. Principals comment teachers have duty free lunch periods but parents are in the cafeterias eating with students.

Regular communication with parents regarding nutrition and physical activity is partially in place and using the school website for this communication is a developing practice. Partnerships for the purpose of strengthening nutrition and physical activity incentives are being developed or are partially in place in Virginia elementary schools.

Summary of Phase II

Principals responded to a survey statements based on the Governor's Nutrition and Physical Activity Scorecard. The scorecard was developed to assist Virginia school divisions in their implementation of wellness policies and as a means to document their progress. The statements reflect best practices for implementation and because the scorecard was developed for Virginia, it reflects expectations for content of Virginia wellness policies. The survey responses

provide the data to outline implementation practices in place in elementary schools. The optional comments section of the survey allowed principals to explain the practices in place giving insight to what happens during implementation.

As reported by the principals almost half of the best practices for wellness policy implementation are being fully or partially implemented. The practices most often in place were related to physical activity, physical education instructional strategies, and the school meal program.

Principals report prioritizing time for physical activity and physical education. The school meal program is supervised by the local school food service department and operates under federal regulations and guidelines. The principals were knowledgeable and aware of the regulations and guidelines and responded that recommended practices for school meals were in place. Principals report the scheduling of school meals allows students an adequate time to eat.

The comments also provided further information regarding the practices that were not in place in the schools. The practices not in place in schools were less related to instruction and related to the management of noninstructional processes in the school. Principals' responses and comments indicate that practices conflicting with traditions such as birthday recognition with cakes and candy or questioning a belief such as nutrition is the responsibility of the parents, not the schools, were difficult to implement. Restricting foods for celebrations, having teachers eat with students, and collaboration with cafeteria staff were practices not in place.

Practices involving communication and promotion of wellness were less implemented in the schools. Principals respond that partnerships with outside resources allow more opportunities for extended nutrition and physical activity for students were not established.

Principal responses reveal few practices for communication with parents regarding nutrition and physical activity. Principals did not provide insight as to why these practices were not in place.

Summary of Wellness Policy Implementation

According to the survey responses from principals regarding their implementation practices, wellness policies are being implemented in Virginia elementary schools. To summarize the extent policies are being implemented, the pattern of implementation by standard can be compared to the comprehensiveness and strength of the standards in the wellness policies. It appears comprehensiveness and strength of the standards influence implementation. Principals have wellness practices in place for standards described in the wellness policy with some degree of detail and direction for implementation. Standards with clearly defined strategies and rated strong were implemented most often. The wellness policy standards described without details had low strength scores and were not implemented as often by principals. Figure 1 displays the policy standards ranked by percentage of wellness practice implementation compared to the strength and comprehensiveness of policy content.

Implementation of the standards for USDA meals, physical activity and physical education were reported in practice at the highest percentage. The wellness policy standards for physical activity and USDA meal standards had detailed goals, objectives, and strategies. While not as detailed or specific the physical education standard was comprehensive mentioning several policy items to direct implementation.

Nutrition education had the highest strength score for the wellness standards in the content analysis. Wellness policies state nutrition education is integrated into other school subjects and coordinated with the total school community. However, the data from the principals indicates practices for integration and coordination of nutrition education are not fully in place.

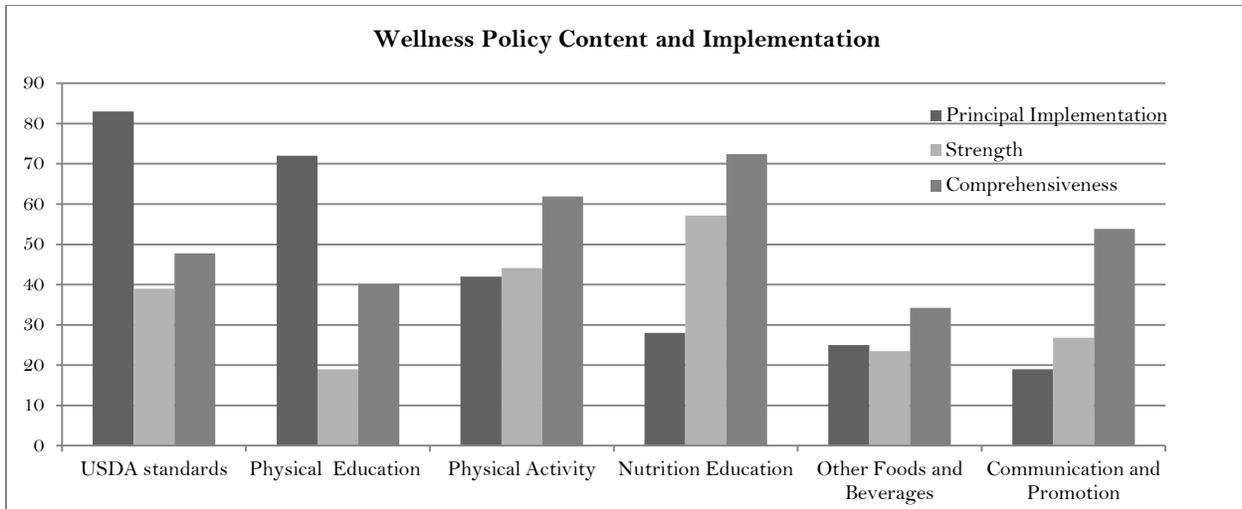


Figure 1. Wellness policy implementation practices as compared to the strength and comprehensiveness means of wellness policies. Adapted from data in Tables 4 and 14 of this study.)

Other school policies and regulations appear to have influenced wellness policies standards and the practices principals implemented more often. The comprehensiveness and strength of the standards for nutritional food, physical activity, physical and nutrition education in wellness policies directly reflect federal regulations and Virginia law. School food service is regulated by the USDA with federal funding dependent upon compliance to regulations. Physical activity, physical education, and nutrition education are established standards of learning by Virginia Code. Incorporating these standards into the wellness policies did not require development of new practices and procedures. The implementation of these wellness policy standards indicates compliance to regulations and to the wellness policy standards.

Wellness policy standards for other foods and beverages and for communication and promotion are not written with the strong detail and directions needed for implementation. While stronger regulations for other foods and beverages and communication and promotion are coming from the federal government, this study found these standards implemented less often in practices.

The standard for other foods and beverages was not as comprehensive in the wellness policies and consequently not as strong as the standards with implementation in place. To be implemented this standard requires incorporating new practices and procedures. Wellness policies outline only a few requirements for this standard and those are not specific. Likewise, the principal response reveals only a few practices related to the minimum standards of other foods and beverages.

While the standard for communication and promotion was one of the more comprehensive sections of the wellness policies, practices for this standard were the least implemented of the wellness standards. The strength score for communication and promotion is the lowest of the standards and not surprising the practices to implement this standard are not in place in schools.

Wellness implementation practices as reported by elementary school principals appear to reflect the policies for student wellness written by the school divisions. The policy items in the standards written with stronger language, USDA meal standards and physical activity, detail the strategies and the expectations for implementation and these standards are being implemented in schools. The wellness implementation practices data also reveals that wellness policy items that were not specifically written with clear objectives are not being implemented.

CHAPTER 5. CONCLUSIONS

“Public policy is the dynamic and value laden process through which a political system handles a public problem. The policy process includes the government’s expressed intentions for outcomes and enactments and the consistent patterns of activity and inactivity” (Fowler, 2004, p. 9). According to the Tenth Amendment governance of public schools is primarily a function of state and local governments. State education policies disperse power and authority to local school boards to write and implement policies to govern schools. Educational policies are written to address particular interests, problems, or conditions. The federal level of government becomes involved in education when it views national interests and conditions are not being addressed by the actions of the states and localities. The federal government acts through court decisions, legislation, and a leadership position to influence educational policies. The purpose of this study was to examine local implementation of student wellness policies in Virginia elementary schools influenced by action of the federal government.

In early 2000, health officials concerned about rising rates of childhood obesity and diet-related chronic diseases among children pushed for action from the federal government. The Child Nutrition and WIC (Women, Infants and Children program) Reauthorization Act (CNRA) was the reaction of the federal government to address health and wellness of children and extended the influence of the federal government into education with a mandate for states to require school divisions, participating in the National School Lunch and/or Breakfast programs to establish student wellness policies by the start of the 2006-2007 school year.

The Virginia Board of Education, responding to the federal mandate, adopted a position statement encouraging school divisions to write and implement wellness policies. The state superintendent of public instruction issued a regulatory memorandum stating wellness policies be written in accordance to guidelines of the federal law and emphasizing the responsibility of school divisions to address problems associated with poor nutrition and inactivity in children. A subsequent superintendent's memo required school divisions to submit updates of wellness policy implementation to the School Health Advisory Board (SHAB) for inclusion in an annual report required by Virginia Code (Virginia Department of Education, 2008).

Historically, policy implementation has been examined using either a top-down or a bottom-up approach or a blended perspective of top and bottom. From a top-down perspective, well designed policies define implementation with clear goals and intentions. The policy design influences and drives practice during implementation. From the bottom-up perspective, the implementers do more than just carry out the stated intentions during implementation. As referred to in the literature, implementers are street-level bureaucrats, who interpret policies and use discretion to adapt policy into practices that make sense to them during implementation.

For this study, policy was examined by blending the two perspectives. Blending a top-down approach—analyzing local wellness policy content in relation to federal guidelines for goals—compliance—with a bottom-up approach—analyzing reports of principals' perceptions of actual practices of policy implementation—allowed a broader perspective of what school divisions are doing to carry out their own policies to address student wellness.

School division wellness policies were evaluated for comprehensiveness and strength to determine the extent of compliance with federal guidelines. The scores reflect the extent to which the guidelines were expanded. Overall, the wellness policies were found to have comprehensive policy items for nutrition education, physical activity, and USDA nutritional standards goals. The wellness policies expanded the federal guidelines for these standards using strong language detailing programming and structure for implementation. The remaining federal guidelines for student wellness goals were addressed in the policies but to a lesser extent. Standards for physical education, communication and promotion, and evaluation were listed in the policies but without specific strategies or details for their implementation.

Federal guidelines allow flexibility for school divisions to write wellness policies to reflect their local conditions. The extent to which wellness policies expanded the required framework of CNRA's guidelines is reflected in the comprehensiveness and strength scores of the student wellness policies. The comprehensiveness and strength of the wellness policies varied, and the overall means were analyzed to see if differences among school divisions were based on demographic features of the localities.

The demographics for school divisions used for this study were size, geographic location, and percentage of free and reduced lunch qualifications. In analysis, larger school divisions were found to have stronger policies than policies in average and small size divisions and the difference was shown to be statistically significant. Further analysis suggests the difference has practical meaning. A suggested reason for larger school divisions to have stronger policies with could be larger school divisions may have more resources. Larger school divisions may be able

to include more strategies in the policies as they have the resources to implement additional programs and provide for more personnel to implement their wellness policies.

School divisions located in cities had stronger wellness policies than policies in school divisions in rural areas or towns. Cities are often thought of as places that children have less opportunity to be physically active outside of school. It appears that school divisions located in cities may have taken responsibility for providing opportunities for students to be physically active at schools as means to promote student wellness. For practical reasons, in light of local conditions, school divisions in cities expanded the guidelines of their wellness policies to address student needs.

The percentage of qualification of students for free and reduced lunch is a reasonably acceptable means to measure poverty level in a school division. School divisions often have additional resources and funding based on the poverty level of their students and I expected to see the strength of these wellness policies to reflect these resources. However, the differences in comprehensiveness and strength scores of wellness policies among school divisions based on free and reduced lunch qualifications were not found to be statistically significant. Although there were differences in percentages of free and reduced lunch qualifications, there was no difference among the wellness policies based on the percentages.

Elementary principals provided the bottom up perspective of wellness policy implementation and their responses were also analyzed for variance based on school demographics. There were no statistical or practical differences for wellness policy

implementation among the demographics for school size, geographic location, or free and reduced lunch qualifications.

Since differences in wellness policy implementation were not found significantly different based on demographics, it was important to compare the reported implementation practices as they relate to wellness standards. Similarities in wellness policy implementation among the elementary principals were the practices in place reflecting the standards for nutritional foods, physical activity, and physical education. Implementation practices for the standards for nutrition education, other foods and beverages, and communication and promotion of student wellness were less often in place as reported by the elementary principals.

Looking at one of the data sets, the wellness policies or the principal's report of practices, provides only half the picture. When compliance data from the top-down view of policy content was combined with data set of the practices in place, commonalities emerge between the top (policy) and the bottom (implementation). The wellness policy practices in place in schools were found to parallel to some extent the strength and comprehensiveness of the wellness policy standards.

Wellness policies had comprehensive goals and strategies for nutrition education, physical activity, and USDA nutritional standards written with strong language to provide guidelines and structure regarding implementation. The strength of the standards for USDA nutritional standards and physical activity appear to influence and drive practices as principal responses reveal many practices and procedures firmly in place for these two standards. These

common standards, strong in the policies and firmly in place in practice, suggest a relationship between policy and the practice.

The converse of the relationship between policy and practice appears to exist as well. The wellness standards which were found to be not as strong in the policies were not reported by the principals to be implemented. For example, wellness policies mention minimum nutritional standards for other foods and beverages and the communication and promotion standard but both lacked regulatory language of specific goals, procedures, and strategies for implementation. These standards were weaker in the policies and had lower percentages of practices in place.

Wellness policies were mandated by the federal government to specifically address the rising rates of childhood obesity and diseases in children related to diet and inactivity. It was alarming to health officials for these diseases to be associated with children since historically only adults, not children, were plagued with these serious health concerns. The federal government mandated wellness policies to address these concerns and based on the response it would appear school divisions did so with an understanding of the heightened need for the wellness policies. However, analysis of the data regarding the extent to which standards have been written in wellness policies suggests that policies have gaps in their application of the federal guidelines.

The fidelity of wellness policy implementation in Virginia elementary schools was shown through content analysis of wellness policies and implementation practices. The school division policies mentioned all recommended federal wellness policy guidelines by including them as written standards however comprehensiveness and strength scores reveal areas where policies do

not to structure implementation with regulations. The actual extent to which the school divisions wrote policies with consideration of the overall goal to consider all aspects of addressing student wellness and to address childhood obesity and disease lies in the individual analysis of the comprehensiveness and strength of standards and the related implementation practices. These findings provide useful insight for school boards to utilize in their policymaking roles.

The examination of wellness policy implementation in Virginia reveals a relationship between policy and practice. Practices to support the USDA regulated meal program and to provide physical activity opportunities parallel strength in these standards in the wellness policies. Providing nutritional school meals along with provisions for daily physical activity have long been a part of the school curriculum. However, a commitment to providing a healthy environment for students requires acknowledgment that these practices alone do not address the relatively new concerns of childhood obesity and diet related diseases. The federal government guidelines suggest that wellness policies go beyond these traditional standards. Strengthening wellness policy standards for other foods and beverages and for communication and promotion with structured strategies and regulations are recommended next steps for policy makers.

Applying nutritional standards to all foods, however, presents a challenge for implementation. While health and nutrition professionals advise that foods and beverages with high sugar, fat, and sodium contents have adverse effects on health and wellness, these are the foods common to our culture and schools and are traditionally used to celebrate, to reward, and to “treat.” Restricting these foods often conflicts with common practices and beliefs.

Recognizing this challenge, policy makers must provide schools with a standardized structure of

strategies that acknowledges tradition but also promotes healthy nutritional choices. Schools provide opportunities daily for modeling behaviors and habits for students. The implementation of practices applying nutritional standards for other foods and beverages, outside of the school meal program, can capitalize on these opportunities. If the expectation is to implement practices that promote and teach healthy habits of wellness with the federal government's goal to address childhood obesity and related diseases in mind, policy makers must strengthen the policies with the specific strategies to do so.

In the examination of wellness policy implementation, the standard for communication and promotion was found to be weaker and implemented to a lesser extent than suggested by federal guidelines. According to the guidelines, the standard for communication and promotion suggests the whole school community plays a role in wellness policy implementation.

Strengthening the standard for communication and promotion would mean additional strategies to facilitate collaboration, cooperation and understanding among stakeholders in and outside of the school. While collaboration has several meanings, based on the federal government's intent to enhance the health and wellness of all students, collaboration refers to the blending of expertise and knowledge to establish a shared responsibility to understand and implement a wellness plan for students. Engaging the school community to share in the responsibility would mean utilizing their collective knowledge of nutrition and physical activity. Policy makers must consider the implications of collaboration among personnel within the schools and the school communities and craft this policy standard with strategies to direct and guide. Communication

and promotion standard strategies would provide structure and support in the implementation of the other standards.

Local school boards in Virginia responded to state and federal mandates to implement wellness policies to address the concerns for student health due to the rising rates of childhood obesity and diet-related diseases. Standards written with specific strategies for implementation are being implemented, and those written without this strength, are not reported as implemented. In order for wellness policies to be “real” policies addressing the concerns they were mandated to address, STRENGTH must be added to ALL standards.

Limitations

Several limitations to the study should be mentioned. The data was collected from the state of Virginia and findings were in light of Virginia school divisions and Virginia elementary school principals. These findings might not be generalizable to other states or to those who seek information about other school levels.

For several reasons, the use of self-reporting to obtain information from principals about wellness policy implementation could be seen as limitations to the data collection. Principals reported on wellness policy implementation in their schools based on their perceptions of what practices were or were not in place. Based on individual perspective the survey statements may have been interpreted in ways not intended. While there was a comment option for each survey statement, principals may have felt restricted by the response choices, thinking none of the answer choices applicable for their particular school. Having principals report on implementation practices they lead in their schools could have resulted in exaggerated answers if

principals felt pressure to appear more compliant or in line with expectations inferred by the statements. Conversely, some principals may have withheld responses to some of the survey statements if they felt intimidated by the survey statements based on best practices.

Another limitation associated with the principal report was the smaller than expected sample size for participation in the survey. This smaller number of responses limited the amount of data regarding wellness policy implementation practices.

Implications for Future Research

The methodology for this study could be used to conduct a more in depth examination of wellness policy implementation in Virginia. Expanding the design of the survey to incorporate a coding system to match principals with school divisions, done in such a way to preserve anonymity, would allow correlation between practices for implementation in the schools with the school divisions.

Collecting more data from additional persons within the schools regarding implementation in addition to principals would also provide additional perspectives and viewpoints. Conducting observations, interviews and triangulating these reports could provide access to more in-depth data relating to the actual implementation process in the schools and school divisions. Broadening the opportunity for additional comments to expand the survey comments could provide more specific information regarding best practices and the specific practices and programs in place in schools.

Another suggestion for research would be to link student health and fitness data to wellness policies and implementation practices. Data from student health assessments such as

student fitness and BMI are available through the state department of education and could be used to provide insight into the impact of implementation on student health and wellness. With the ultimate goal of improved student wellness, research should focus on the success stories of wellness policies that are being effectively and efficiently implemented.

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APPENDIX A

SCHOOL WELLNESS POLICY EVALUATION TOOL

www.yaleruddcenter.org/resources/upload/docs/what/communities/schoolwellnesspolicyevaluationtool.pdf

Attachment: School Wellness Policy Evaluation Tool

APPENDIX B

INTRODUCTORY LETTER TO INVITE PRINCIPAL PARTICIPATION

PRINCIPAL SURVEY

Dear Elementary Principal,

I would like to request your participation in a study of the implementation of local school wellness policies in elementary schools in the state of Virginia. I would greatly appreciate your willingness to complete this survey which seeks information on current practices in place in your school for nutrition and physical activity. Thanks in advance for your participation! I appreciate your time!

Carol Atkinson Lewellyn

IRB # HM 15188

Title: AN EXAMINATION OF FIDELITY AND BEST PRACTICES IN LOCAL IMPLEMENTATION OF STUDENT WELLNESS POLICIES IN VIRGINIA AS FEDERALLY MANDATED THROUGH THE CHILD NUTRITION AND REAUTHORIZATION ACT SECTION 204

Investigators: Dr. Charol Shakeshaft and Carol Atkinson Lewellyn, Doctoral Candidate

Description of the Study, the Survey and Your Involvement

The purpose of this study is to examine implementation of local student wellness policies and practices in place. You are being asked because of your position as an elementary school principal in the state of Virginia.

If you decide to participate in this study, you will complete a web-based survey that will take approximately 15 minutes. Your participation and all information provided will be kept confidential and analyzed strictly for the purpose of this study.

The survey consists of two parts. Part I will ask for school demographic data. Part II asks for responses to statements regarding wellness policy practices and implementation within your elementary school.

Risks and Discomforts

There are no risks or discomforts associated with this study. You may choose to skip survey questions you prefer not to answer or stop participating in the study at any time.

Benefits and Costs to You

You may not derive any direct benefit from this study; however, information obtained from this study may provide the in about local implementation of student wellness policies and what practices are in place in the state of Virginia to provide research for best practices of implementation of the policy. Other than your time, there are no costs for participating.

Questions

If you have any questions, complaints, or concerns about your participation in this research, contact: Dr. Charol Shakeshaft cshakeshaft@vcu.edu 804-828-9892
Carol Atkinson Lewellyn lewellynca@vcu.edu 804-744-9246

The researcher/study staff named above is the best person(s) to call for questions about your participation in this study.

If you have any general questions about your rights as a participant in this or any other research, you may contact: Office of Research
Virginia Commonwealth University
800 East Leigh Street, Suite 3000
P.O. Box 980568
Richmond, VA 23298
Telephone: (804) 827-2157

Contact this number for general questions, concerns or complaints about research. You may also call this number if you cannot reach the research team or if you wish to talk with someone else. General information about participation in research studies can also be found at <http://www.research.vcu.edu/irb/volunteers.htm>.

(Principal Survey from Survey Monkey included as an attachment to this appendix at the end of the document after School Wellness Evaluation Tool)

PRINCIPAL SURVEY

TITLE: AN EXAMINATION OF THE FIDELITY AND BEST PRACTICES OF LOCAL IMPLEMENTATION OF STUDENT WELLNESS POLICIES IN VIRGINIA AS MANDATED BY THE FEDERAL GOVERNMENT CHILD NUTRITION REAUTHORIZATION ACT SECTION 204

Part I Demographics – Please complete each statement below

1. My school is located in a DROP DOWN geographic region in Virginia.
2. My school student enrollment is approximately DROP DOWN _____ students.
3. My school serves students in grades _____.
4. My school's percentage for eligibility for free and reduced lunch percentage is DROP DOWN.
5. My school participates in the federal breakfast program – choose yes or no.
6. My school participates in the federal lunch program – choose yes or no.

Part II Choose a response to each of the 29 statements listed below.

1. All students in my school receive physical education for at least 150 minutes/week.
Fully in Place Partially in Place In Development Not in Place

2. My elementary school provides a minimum of 30 minutes of daily recess that promotes physical activity beyond what is provided through physical education classes.
Fully in Place Partially in Place In Development Not in Place

3. My physical teacher uses instructional practices that provide for maximum participation for every student in all physical activities. All students are moving 90 percent of the time during the PE class period.
Fully in Place Partially in Place In Development Not in Place

4. The school provides students and their families opportunities to participate in a variety of physical activities.
Fully in Place Partially in Place In Development Not in Place

5. The physical education teacher consistently uses instructional practices that are appropriate for students with special needs.
Fully in Place Partially in Place In Development Not in Place

6. The teachers in this school integrate health and physical education concepts into other curriculum areas such as mathematics, science, history/social science, and English.
Fully in Place Partially in Place In Development Not in Place

7. My school has adequate equipment (e.g., balls, rackets, and other manipulatives) for every student to be active both in recess time and physical education.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
8. Students use feedback technologies, such as pedometers, that promote student-centered approaches to learning about nutrition and physical activity.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
9. At least 50 percent of boys and 50 percent of girls participate in school or community-sponsored extracurricular physical activity programs and interscholastic sports.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
10. Through school-community partnerships, students have opportunities to participate in activities that promote physical activity.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
11. A computerized point of service meal counting program is used in the cafeteria in a manner that provides ultimate protection of identities of students' eligibility categories.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
12. My school meal program successfully implements the "office vs. serve" meal standard offering students with nutritionally based meals.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
13. Students have adequate time to eat school meals.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
14. School meals include a variety of foods. (A school meal is a set of foods that meets reimbursable school meal regulations. This does not include a la carte foods.)
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
15. Low-fat and skim milk are available at breakfast and lunch every day.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
16. Meals include appealing, low-fat items.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
17. Food purchasing and preparation practices are used to reduce fat content.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
18. All foods provided (parties, snacks, and treats) or sold on campus during the school day must meet minimum nutrient standards.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|

19. The only beverages sold by the cafeteria and anywhere on campus during the school day are 100 percent fruit juices or fruit juice drinks with a minimum of 25 percent fruit juice, water, and low-fat or non-fat milk
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
20. The only snacks sold in the cafeteria and anywhere on campus during the school day are less than 300 calories per item.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
21. The only snacks sold in the cafeteria and anywhere on campus during the school day have no more than 30 percent of calories from fat (except nuts and seeds) and no more than 10 percent of calories from saturated fat per serving
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
22. Fund-raising organizations are encouraged to limit the sale of high fat or high calorie foods and have minimum nutrition standards for all foods sold.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
23. There is collaboration between the cafeteria and the classroom to reinforce nutrition education.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
24. Adults eat with students and serve as role models for healthy eating practices.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
25. Students are given nutrition education opportunities and resources beyond minimum required classroom instruction.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
26. The school has an active Nutrition Advisory Council (or cafeteria committee) that includes students and their parents.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
27. Nutrition information is provided regularly through written and other communication with parents.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
28. Partnerships are developed with allied groups to strengthen the mission of improving the nutritional status of children
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|
29. Menus and nutrition messages are posted monthly on the school's Website.
- | | | | |
|----------------|--------------------|----------------|--------------|
| Fully in Place | Partially in Place | In Development | Not in Place |
|----------------|--------------------|----------------|--------------|

VITA

Carol Atkinson Lewellyn, the daughter of Helen and Tex Atkinson, was born on October 17, 1957. One of nine children, she was raised in Highland Springs, VA. After graduating with honors from Highland Springs High School, Carol attended and graduated from Longwood College in Farmville, VA where she received a Bachelor of Science degree in elementary education. In 1992, she earned a Master in Education, concentration in Administration and Supervision from Virginia Commonwealth University while teaching in elementary and middle schools in Henrico County, VA. After serving 3 years as an elementary school assistant principal and 7 years as an elementary principal in Chesterfield County, VA, Carol retired from education in June 2012 with 32 years of experience. Carol now resides in Midlothian, VA. She continues her lifelong vocation as an educator as she pursues certification as a lifestyle coach in the field of nutritional and preventive medicine.