

**A DIFFUSION STUDY OF THE FEDERALLY MANDATED
SCHOOL WELLNESS POLICY**

A Dissertation

by

DINAH JANE HARRIGER

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2011

Major Subject: Health Education

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ABSTRACT

A Diffusion Study of the Federally Mandated School Wellness Policy. (August 2011)

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Using Diffusion of Innovations (DOI) in Organizations as a theoretical framework, this dissertation analyzed the diffusion process of the federally mandated School Wellness Policy (SWP) in three separate studies. Beginning with a content analysis of the SWP mandate's legislative history using the constant comparative method, the first manuscript evaluated the policy *Initiation* process to provide context for the creation of the original mandate. Next, the researcher conducted a systematic literature review to organize and analyze the current literature on SWP implementation. The third manuscript presented a qualitative case study of one local school district's experience implementing the School Wellness Policy. Interviewing school personnel such as teachers, school nurses, PE teachers, and cafeteria managers provided key insight to processes involved in policy implementation at the local level.

Three key findings emerged from the study: 1) a lack of research on the clarifying stage of the policy diffusion process, 2) the limitation of policy alone in addressing child obesity, and 3) an opportunity for health promotion researchers to engage in policy research. This study is unique because it analyzed the complete diffusion process of the SWP policy, beginning with policy decision making by

legislators on the federal level and ending with policy implementation efforts by school district personnel on the local level.

Public attention to the child obesity epidemic has grown significantly in the last decade. However, increased awareness is not necessarily indicative of change or improvement of the problem. In the case of the School Wellness Policy (SWP), the federal government attempted to mandate change in the school environment as a way of combating the child obesity epidemic. Although public policy can be effectively used to facilitate change, policy alone is incapable of solving problems as vast and complex as the child obesity epidemic. The SWP has resulted in changes to the school environment; but, this study showed that a societal shift (change across all private and public sectors) is necessary for long term success in combating child obesity.

DEDICATION

This dissertation is dedicated to my parents, Bill and Erin Harriger. I have endured this educational journey because of your support, encouragement and unconditional love. I am so grateful you instilled in me the importance of faith and its role in shaping my daily perspective. My dependence on the Lord has given me the strength to persevere. To my dad, thank you for always challenging me to be my best. To my mom, you taught me the value and joy of learning, thank you for such a precious gift. I love you.

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NOMENCLATURE

CNWRA	Child Nutrition and WIC Reauthorization Act of 2004
CATCH	Coordinated Approach to Child Health
D.I.S.D.	Davey Independent School District
DOI	Diffusion of Innovations Theory
HHFKA	Healthy, Hunger-Free Kids Act of 2010
LEA	Local Education Agency
SHAC	School Health Advisory Council
SWP/LWP	School Wellness Policy/ Local Wellness Policy
TAC	Texas Administrative Code
TEC	Texas Education Code
TPSNP	Texas Public School Nutrition Policy

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CHAPTER I

INTRODUCTION: THE SCHOOL WELLNESS POLICY MANDATE

Study Rationale

Traditionally, the field of health education and health promotion has relied heavily on intrapersonal theories to provide linkages between personal behaviors and health risks. In the seminal article *An Ecological Perspective on Health Promotion Programs*, McLeroy, Bibeau, Steckler and Glanz (1988) call attention to the overemphasis on individual-level factors in health promotion research. The authors challenge the field to target both individual and social environmental factors in planning, implementing, and evaluating health promotion interventions. Focusing on individual-level factors ignores the context in which health behaviors occur (Goodson, 2010). Expanding the field's perspective to include theoretical frameworks that account for social environmental factors provides a more comprehensive explanation of health risks and potentially effective interventions; thus, widening the influence of the field (McLeroy et al., 1988).

Arguably, public policy is an effective way to create widespread change in a relatively short amount of time. Failure to comply with a policy usually results in negative consequences. Thus, historically, policy change has been effective in modifying health behavior (Oldenburg, Sallis, Ffrench & Owen, 1999). Because public policy has the potential to positively influence health behavior on a large scale, this

This dissertation follows the style of *Health Education and Behavior*.

dissertation was driven by a desire to expand the theoretical landscape in the field of health promotion by studying the diffusion process of an innovative federal mandate.

Statement of Purpose

The purpose of this study was *to examine the diffusion process of the federally mandated School Wellness Policy (SWP)*. Diffusion is “the process in which an innovation (new idea) is communicated through certain channels over time among the members of a social system” (Rogers, 1962). To facilitate change, an innovation must diffuse through a given population or setting to maximize application of the new idea.

To date, few policy studies have analyzed the policy diffusion process comprehensively (Meyer & Goes, 1988). Although the literature on School Wellness Policies includes policy development and evaluation, little, if any, research currently provides an assessment of the policy implementation process in its entirety. Oldenburg et al. (1999) argue,

While there has been significant research attention directed at establishing the efficacy and effectiveness of many and varied health promotion intervention strategies over the past 20 years, much less attention has been given to the development of, and research into, effective methods for the broader dissemination, uptake and diffusion of these interventions. (p. 121)

Current School Wellness Policy research fails to provide a broad explanation of the policy process from beginning (how a policy is made) to end (how a policy is implemented). Instead, the federal decision making process (why a policy is made) is studied separately from how a policy is actually implemented. By studying the two phenomena separately, relevant contextual factors may be overlooked. To analyze the entire diffusion process of the School Wellness Policy, the study began by analyzing

legislative decision making on the national level and ended by analyzing policy implementation on the local level.

The Policy

In the spring of 2004, during the 108th Congressional Session, President George W. Bush signed into law the Child Nutrition and WIC Reauthorization Act (CNWRA). A majority of the bill merely extended the programs outlined in previous legislation concerning child nutrition programs (e.g. school meal programs, summer food service, child care food programs) and supplemental service programs. However, legislators also included a new provision to modify the school health environment (Richardson, 2006). The federal government mandated all local education agencies “LEAs” (also called school districts) to create and begin implementing a “School Wellness Policy (SWP)” (also called “local wellness policies (LWP)”) by the fall of 2006. Implementing School Wellness Policies across the country was one of the first widespread efforts of the federal government to address the problem of child obesity using the school environment as the primary avenue for change (McDonnell & Probart, 2008).

Theoretical Framework

Diffusion of Innovations (DOI) in Organizations theory provides a detailed and comprehensive explanation of how new ideas create social change in organizations by challenging the status quo. The central assumption unique to Diffusion of Innovations in Organizations theory is the idea that organizational variables influence behavior in a manner greater than the aggregate of individual members within the organization (Rogers, 2003); thus, the influence of the organizational collective (a universal policy

framework for all LEAs across the country) is greater than the sum of individual members (each LEA by itself). In theory, implementing a comprehensive innovation like the School Wellness Policy in an organizational context is more likely to be effective in preventing and combating child obesity than allowing each local education agency to address the issue at will.

For the purposes of this study, the policy organization was analyzed which included the policymakers who initiated the policy innovation (the decision unit) and the local education agencies that were charged with implementing the policy innovation (the adoption unit). Congress and local education agencies are usually studied separately as they are organizations in and of themselves. However, in an effort to bridge the research gap, the system as a whole served as the unit of analysis for this study (the decision unit (policymakers) + the adoption unit (LEAs) = the policy making system).

Stages of the Diffusion of Innovations Organizational Model

According to Rogers' Diffusion of Innovations in Organizations theory, the innovation process occurs in two phases which comprise five distinct stages. (Note: See Figure 1.1 and Appendix A)

- Phase 1 = Initiation Phase
 - Stage 1 = Agenda Setting
 - Stage 2 = Matching
- Phase 2 = Implementation Phase
 - Stage 3 = Re-defining
 - Stage 4 = Clarifying
 - Stage 5 = Routinizing

Overview

To provide a comprehensive, theoretically-driven analysis of the federally mandated School Wellness Policy, the study was conducted in three segments. Chapter II explored the policy initiation process (Phase 1 (Initiation) = agenda setting and matching) through a thematic content analysis of the documents and records included in legislative history of the CNWRA of 2004. In Chapter III utilized the three Implementation stages (Phase 2 (implementation) = re-defining, clarifying, and routinizing) to frame and organize the existing body of health promotion literature on School Wellness Policies. Chapter IV also addressed policy implementation through in-depth interviews with local school district personnel.

- Chapter II (Document Analysis) = Initiation Phase (Agenda Setting and Matching Stages)
- Chapter III (Systematic Lit. Review) = Implementation Phase = (Re-defining, Clarifying, and Routinizing Stages)
- Chapter IV (Case Study) = Implementation Phase (Re-defining, Clarifying, and Routinizing Stages)

Thus, the study evaluated the diffusion process of the SWP comprehensively, from beginning to end.

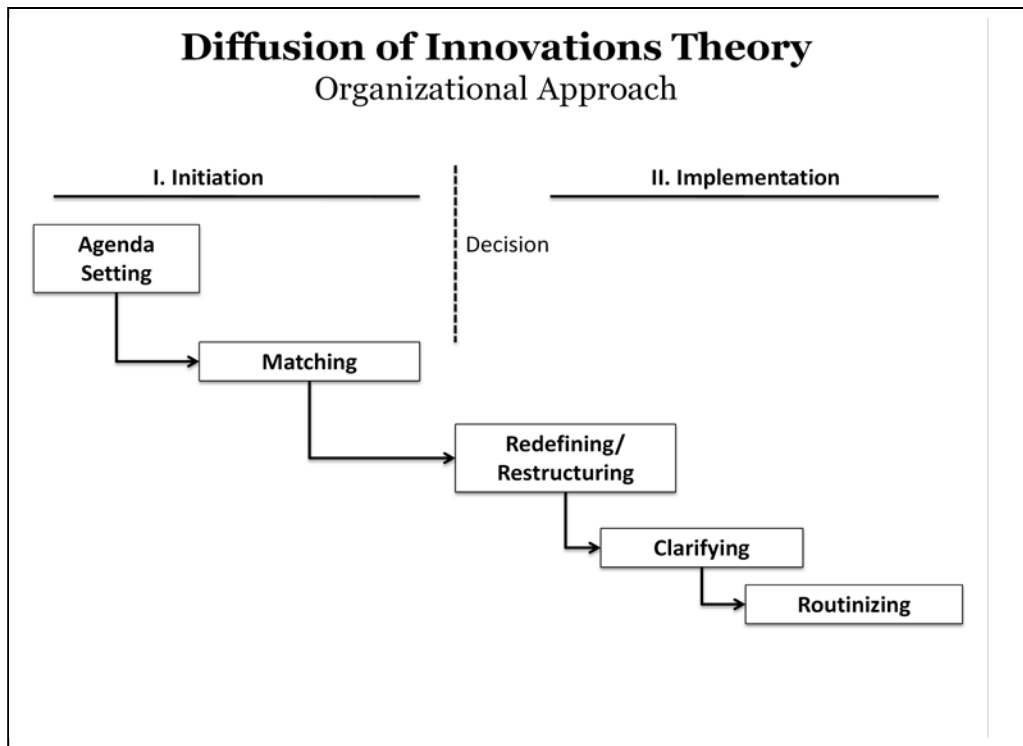


Figure 1.1. Diffusion of Innovations Theory: Organizational Approach

CHAPTER II

SCHOOL WELLNESS POLICY INITIATION: A DOCUMENT ANALYSIS

Introduction

Although health promotion research has addressed the School Wellness Policy mandate through implementation and evaluation studies (see Chapter III), discussions concerning policy initiation and legislative rationale are limited (Holtrop, Price, & Boardley, 2000). By focusing attention on the policy initiation process, the field of health promotion has an opportunity to broaden its influence by, 1) providing contextual relevance to health policy implementation and evaluation studies and 2) engaging the field of health promotion in the policy development process (Holtrop et al., 2000; McGinnis, Williams-Russo, & Knickman, 2002).

The policy process is cyclical because policy decisions shape policy implementation research, and in turn, policy implementation research informs the policy-making process. Legislators look to the research community to understand how the policies they are creating are being implemented and effecting change. Understanding legislative intent and the context in which a given policy was created is essential to accurately studying policy implementation (Kingdon, 2003). Simply reading a policy fails to provide a complete contextual framework. Analyzing legislative discourse provides relevant information health promotion researchers can use to strengthen policy implementation and evaluation studies.

Given the divide between legislators and researchers, researchers often overlook the potential impact of their findings (Longest, 2006). Legislators use research findings to justify the alteration of existing policies or creation of new policies. The field has an opportunity to offer unique insight, by studying how and why policy is made from a health promotion perspective. Policymakers look to outside experts to help inform policy decisions. If health promotion professionals fail to contribute to policy development discussions, the field is missing a chance to influence health behavior on a broad scale.

In 2004 Congress passed the Child Nutrition and WIC Reauthorization Act (CNWRA), marking the first significant attempt by the federal government to address the child obesity epidemic (McDonnell & Probart, 2008). In the bill, legislators included a provision for the local education agencies receiving funding for federal breakfast and lunch programs (Richard B. Russell National School Lunch Act of 1946; Child Nutrition Act of 1966) to create and implement a School Wellness Policy (SWP). In 2010, The Healthy, Hunger-Free Kids Act (HHFKA), authorized by President Barak Obama, maintained the original five components but altered SWP evaluation procedures. Although the mandate has been updated, the scope of this study was limited to the original School Wellness Policy mandate (CNWRA, 2004) because the new policy was passed late last year (2010) and has not yet gone into effect. The Act required each SWP to address five central components:

- 1) Includes goals for nutrition education, physical activity, and other school based activities that are designed to promote student wellness in a manner that the local education agency determines is appropriate;
- 2) Includes nutrition guidelines by the local education agency for all foods available on each school campus under the local education agency during the

school day with the objectives of promoting student health and reducing child obesity;

- 3) Provides assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture;
- 4) Establishes a plan for measuring implementation of the local wellness policy, including the designation of 1 or more persons within the local education agency or at each school as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy; and
- 5) Involves parents, students, representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy. (Child Nutrition and WIC Reauthorization Act, 2004).

Using Diffusion of Innovations as a theoretical framework, the purpose of this study was to address the School Wellness Policy development process from a health promotion perspective. To analyze the intent of federal policymakers in proposing the School Wellness Policy, the following research questions served as a general guide: *1) What is the need identified by the federal law and addressed by the School Wellness Policy? 2) Why/How is the SWP proposed as a solution to meet the identified need?*

Theoretical Framework

Everett Rogers defined diffusion as, “the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 1962). According to Rogers’ model, the diffusion process occurs in two phases: Initiation and Implementation (see Figure 1.1). The Initiation phase, which involves information gathering, conceptualization, and planning for the adoption of an

innovation by organization leaders (Rogers, 2003; Zaltman, 1973), served as the theoretical framework for this study.

Two stages in the Initiation phase, *Agenda Setting* and *Matching*, describe the context in which organization leaders make the decision to adopt an innovation (Owen et al., 2002; Rogers, 2003). *Agenda setting* is the process by which organization leaders identify and prioritize problems. When organization leaders identify a problem, they create a need for an innovation to address the resulting performance gap (the discrepancy between an organization's expectations and its actual performance). Other than identifying and recognizing needs, the *Agenda Setting* stage also includes steps to explore the organization's environment for solutions. In an attempt to fill the performance gap, organization leaders evaluate existing resources in innovative ways (Rogers, 2003). Setting the agenda initiates the entire innovation process as the ideas and actions occurring in the first stage perpetuate continual motivation to complete the diffusion process (Rogers, 2003). During the 108th legislative session, policymakers identified child obesity and overweight as an issue serious enough for placement on the legislative agendas in both the U.S. House of Representatives and U.S. Senate. During the *Agenda Setting* phase, legislators considered how the federal government could best address the problem.

The second stage in the Initiation phase, *Matching*, occurs after organization leaders place the identified problem on the agenda and subsequently match the problem with a solution (the innovation). During the *Matching* phase, organization leaders attempt to evaluate an innovation's feasibility in light of available resources (Cool et al.,

1997; Rogers, 2003). *Matching* involves significant planning as organizational leaders attempt to identify potential benefits and possible barriers that may occur during the Implementation phase. The *Matching* stage is important because a good match is essential for innovation sustainability (Zaltman et al., 1973). At the *Matching* stage, organization leaders may decide an innovation and problem are mismatched and terminate the innovation process before implementation occurs (seen regularly in the policy arena as legislators vote to approve/disapprove policies) (Rogers, 2003). The *Matching* phase is vital to the diffusion process because it provides the link between the two main phases, Initiation and Implementation. In 2004, legislators matched child obesity (problem) with the enactment of a new mandate requiring local education agencies to design and implement a School Wellness Policy (innovation).

Methods

To assess the policy Initiation phase, the researcher analyzed the rationale compelling policymakers to propose the School Wellness Policy. To capture the *Agenda Setting* and *Matching* stages, the researcher analyzed documents pertaining to the enactment of the CNWRA (2004) in both Congressional Chambers during the 108th U.S. legislative session.

Sources of Data

All documents included in the analysis were obtained via open public record. The ProQuest Congressional Record (*Lexis Nexis Congressional*) database includes the official records of the proceedings and debates of the U.S. Congress. The Congressional Record database served as the primary source to retrieve documents included in the

legislative history of the CNWRA of 2004. The U.S. House of Representatives Committee on Education and the Workforce website was also accessed to retrieve relevant documents such as press releases and House committee meeting minutes. The researcher limited the analysis to the documents specifically addressing the creation and passage of the SWP mandate (See Figure 2.1).

Hearings. Congressional hearings play a pivotal role in the initial stages of the policy-making process. Because hearings operate within the discretion of congressional committees, they are authorized to occur at any time (while Congress is in session, recessed, or adjourned). A report by the Congressional Research Service defines a congressional hearing as,

The broad information-gathering techniques committees use-and have always used-in policymaking and oversight. Congress benefits from hearings in a variety of ways. They inform Senators (and House Representatives), staff, and public about issues and legislative proposals, and orchestrate public support and attract visibility to an issue. They also serve to monitor government programs and activities and expose problems Congress may seek to remedy. Finally, hearings give citizens an opportunity to participate in the policy process and help build a public record (Sachs, 2004).

With the goal of informing policy decisions, Congressional hearings allow committee members to gather information on key issues from various knowledgeable sources and interest groups. Opinions, expert testimony, research findings, and other information presented during a hearing may occur in reaction to an existing policy or be used as justification for a new policy. For this study, the hearings conducted before the Subcommittee on Education Reform and Committee on Education and the Workforce in

Documents

2003-2004: 108th Congress (January 3, 2003- January 3, 2005)

House Majority: Republican Party

Senate Majority: Republican Party

I. Hearings

- a. House (2 subcommittee and 1 full committee)
 - i. July, 16, 2003: "Food for Thought: How To Improve Child Nutrition Programs" before the subcommittee on Education Reform (Committee on Education and Workforce)
 - ii. October 7, 2003: "Improving the Quality and Efficiency of Commodity Distribution to Federal Child Nutrition Programs" hearing before the Committee on Education and Workforce
 - iii. February 12, 2004: "Encouraging Healthy Choices for Healthy Children" before the subcommittee on Education Reform (Committee on Education and Workforce)

II. House Committee Documents

- a. Subcommittee Markup (Education Reform)
 - i. Opening Statement of Michael Castle
- b. Full Committee Markup (Committee on Education and the Workforce)
 - i. Opening Statement of Jon Boehner

III. Reports

- a. House
 - i. March 23, 2004: H. Rpt. 108-445 on H.R. 3873, "Child Nutrition Improvement and Integrity Act" Mar. 23, 2004.

IV. Debate

- a. House
 - i. March 24, 2004: H.R. 3873: Child Nutrition Improvement and Integrity Act
 - ii. June 24, 2004: S. 2507: Child Nutrition and WIC Reauthorization Act
- b. Senate
 - i. June 23, 2004: S. 2507: Child Nutrition and WIC Reauthorization Act

Figure 2.1. Documents

the U.S. House of Representatives were analyzed since the SWP mandate originated within the two committees.

Reports. After a full committee ‘orders a bill reported’, a committee report is written (which may take weeks or months) and then filed with the clerk of the full Chamber (either the House or the Senate). A committee report may include explanations of committee recommendations, rationale for specific portions of the bill, history of legislative actions, and possibly a statement from dissenting viewpoints. A bill must be reported before it is eligible for consideration and vote by the full Chamber. For this study, the report published by the House Committee on Education and the Workforce (H.R. 108-445, 2004) was analyzed as it explained the committee members’ fundamental rationale for the School Wellness Policy mandate.

Debate. When a bill is presented to a full Chamber for consideration, legislators have the opportunity to debate the bill. Time allotted for debate is usually divided equally between legislators who support and legislators who oppose the bill. If amendments are proposed, they are considered and debated at the same time. After the debate, the Chamber votes on the final passage of the bill. For this study, records of the debates in both Chambers concerning the CNWRA were analyzed.

Committee Documents

The researcher retrieved documents outlining committee and subcommittee discourse from relevant committee websites, primarily the House Committee on Education and the Workforce and the Subcommittee on Education Reform (where the SWP mandate originated).

Content Analysis

Step 1. Given the breadth and the magnitude of information presented in the accessed documents, the researcher limited the analysis to text specifically addressing the School Wellness Policy by searching for key words. Because policymakers created the School Wellness Policy to address child obesity, phrases such as ‘child obesity’ and ‘child overweight’ were used to include text pertaining to the *Agenda Setting* stage. The term ‘School Wellness Policy’ (and some variations) was used to select the text addressing the *Matching* phase. Key words and phrases were used to locate portions of the documents addressing School Wellness Policies. However, the researcher carefully maintained the context of the information by extracting full paragraphs and sections of the documents.

After portions of text were extracted from the original documents, text was divided into units of coding. Boyatzis (1998) defines units of coding as “the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon” (p. 63).

Step 2. Then, the researcher grouped independent units of coded information into preliminary groups according to similar characteristics/ideas. Using the constant comparative method (Lincoln & Guba, 1985), groups emerged through a series of iterative steps that allowed the researcher to assign and re-assign coded units to different groups as new data were added. After the researcher sorted the units of coding for one document into preliminary groups, units of coding were shuffled into a random order, combined with the units of the second document, and sorted into preliminary groups for

a second time. The process was repeated nine times as the units of coding for each document were included in the analysis. Data groups were then combined to develop thematic categories based on relevance to the two diffusion stages of interest: *Agenda Setting and Matching*

To determine the final categories, inclusionary and exclusionary criteria were developed for each category (Boyatzis, 1998). For example, data units addressing short term consequences of child obesity initially formed a group which later became a subset within the larger *Agenda Setting* category. Groups were assigned to a category based on their fit with the overarching definition of the diffusion stage represented by the category. The code (inclusion criteria) was as follows:

1. Agenda Setting
 - a. Consequences
 - i. Personal
 1. Short term
 2. Long term
 - ii. Societal
 1. Health care costs
 2. Generational impact
 - b. Potential Solution Elements
 - i. School Environment
 1. Nutrition
 2. Physical Activity
 - ii. Cooperation
 1. Policymakers
 2. Societal sectors
2. Matching
 - a. Local control
 - b. Policy limitations

Step 3. In theory driven code analysis, the researcher draws conclusions concerning how the thematic categories related to one another. The interpretation of the

thematic categories provided a commentary of the theoretical framework that informed the original unit coding process (see Discussion) (Boyatzis, 1998).

Credibility

To ensure credibility of the findings and interpretations of the data, the researcher used two techniques: triangulation and member checking (Lincoln & Guba, 1985).

While triangulation provided factual credibility to the data extracted from legislative documents, member checking ensured credibility of thematic interpretations.

To ensure the credibility of factual evidence, the researcher triangulated the data by using multiple data sources (hearings, reports, debates, and other documents). The researcher also accessed data from both Congressional Chambers (House and Senate) and across several years of legislative action (2003-2004) (Lincoln & Guba, 1985). Using documents from multiple sources provided an avenue for the researcher to corroborate information presented by each source regarding SWP Initiation.

Once the data were placed into thematic categories, the researcher discussed the findings with a key legislative staffer involved in the creation of the SWP mandate. Member checking established meaningfulness of findings and accuracy of interpretation (Lincoln & Guba, 1985).

Results

The Story of the SWP

The School Wellness Policy mandate was originally sponsored by Representative Michael Castle, a Republican Congressman from Delaware who served as the Chair of the Subcommittee on Education at the time. The Subcommittee on Education operated as

a specialized group within the Committee on Education and the Workforce in the U.S. House of Representatives. Rep. Castle (DE) originally proposed the SWP in the Child Nutrition Improvement and Integrity Act (H.R. 3873, 2004). On March 24, 2004, the House of Representatives voted to approve the initial bill (with a vote of 419 yeas, 5 nays, and 9 non-voting). Then, the initial bill was passed to the Senate for consideration. The School Wellness Policy was amended to the Child Nutrition and WIC Reauthorization Act (2004) in the Senate and passed with unanimous consent on June 23, 2004. The Senate approved the CNWRA, which then went back to the House for final approval (passed by a voice vote). On June 30, 2004, President George W. Bush signed into law the Child Nutrition and WIC Reauthorization Act.

In providing a rationale for setting a federal minimum standard for nutrition and physical activity in schools, legislators discussed why they believed obesity is a problem (*Agenda Setting*) and how they planned to address the issue (*Matching*). The following findings represented the four most prevalent themes that emerged from the thematic content analysis of the legislative documents.

Diffusion Stage: Agenda Setting

Federal legislators explicitly named the rapidly growing number of obese and overweight children in the United States (and increasing number of children at risk for becoming obese) as the problem necessitating the School Wellness Policy mandate. In searching of an avenue to address the epidemic, policymakers identified the school environment as the best place to begin making changes, namely changes to the

nutritional quality of foods on campus and physical activity requirements. House Report 108-445 (2003) submitted by the Committee on Education and the Workforce states,

Recognizing that a growing number of children are obese or at risk of becoming obese, H.R. 3873 (Child Nutrition Improvement and Integrity Act) seeks to address a piece of the problem by requiring local education agencies participating in programs authorized by this legislation to establish local wellness policies designed to improve nutrition education and increase physical activity in schools.

The researcher identified two main themes in the legislative discourse addressing the *Agenda Setting* stage: 1) Consequences of obesity and 2) Potential solution elements.

Theme #1: Consequences

The primary reason legislators decided to enact a law at the federal level related to the consequences associated with the obesity epidemic. Legislators discussed the consequences of childhood obesity at length, both for children on an individual level and for society as a whole.

Personal. On an individual level, policymakers discussed concerns with both short and long term consequences for overweight and obese children. In the short run, legislators acknowledged obesity and poor health affects a child's ability to succeed academically, physically, and emotionally. In his opening statement of a hearing before the House Subcommittee on Education, Rep. Castle (DE) said,

A healthy diet is critical for a child's academic success. Numerous studies have shown that diet affects children's ability to learn. There are proven linkages between diet and cognitive development, concentration levels, and psycho-social behaviors. (Food for Thought, 2003)

Rep. Castle alerted fellow legislators to the scope of personal problems associated with obesity in young children.

Aside from developmental and emotional consequences, policymakers were worried about the increased risk for overweight and obese children to develop chronic diseases. Surgeon General Richard Carmona testified,

The bad news is that an unprecedented number of children are carrying excess body weight. That body weight significantly increases our kid's risk for a range of health problems, including diabetes, heart disease, asthma, emotional and mental health problems. (Food for Thought, 2003)

Dr. Carmona's message emphasized the expense for individuals to treat chronic diseases and the influence of chronic diseases on quality of life.

Legislators also expressed concern that overweight children are more likely than non-overweight children to become overweight and obese adults.

Child obesity is becoming a major health problem in the United States, and studies suggest that overweight children are significantly more likely to become overweight or obese adults. Children are increasingly suffering from conditions traditionally associated with adulthood, including Type 2 diabetes, high cholesterol, and high blood pressure. I am very concerned about child obesity and the fact that it is slowly becoming an epidemic (Rep. Castle (DE), Food for Thought, 2003).

Looking back to the 1960's, just over 4 percent of six-to-17-year-olds were overweight. Today that rate has more than tripled, to over 15 percent, and the problem doesn't go away as children grow up. Nearly three out of every four overweight teenagers become overweight adults. I'm not willing to stand by and let this happen. American's children deserve better than being condemned to a lifetime of serious, costly, and potentially fatal medical complications associated with being overweight. (Dr. Carmona, Food for Thought, 2003).

You made some very good points here, particularly that the behavior that our kids learn today is the behavior that does indeed last a lifetime. (Rep. Upton (MA), Food for Thought, 2003).

Because overweight children begin a lifelong battle with the consequences of poor health at a young age, Congress believed addressing the issue for young children was essential to effectively reversing the trend.

Societal. Because health related habits and behaviors formed as children have the potential to make a lifelong impact and in-turn shape the habits of future generations, Congress discussed the societal ramifications of child obesity. Rising rates of child obesity not only impact individuals but American society as a whole, namely health care costs associated with obesity-related chronic diseases. Surgeon General Carmona stated,

In the year 2000, the total annual cost of obesity in the United States was \$117 billion. While extra value meals may save us pennies at the counter, they are costing us billions of dollars in health care and lost productivity. (Food for Thought, 2003)

Legislators believed the cost of obesity would continue to rise exponentially unless they developed policies to address the issue on a societal level.

Policymakers also felt preventing obesity, not just treating symptoms of currently obese children, was an important piece of the puzzle. The Surgeon General urged legislators to support prevention efforts.

Please work with me to support our efforts to improve Americans' health literacy, to put prevention first in all we do, and to end our nation's obesity epidemic before it has a chance to reach other generations of American's. (Food for Thought, 2003)

Congress acknowledged that prevention efforts required more funding initially.

However, the costs associated with treating and managing chronic disease in the long run were far greater than the initial costs associated with prevention efforts (teaching

healthy lifestyle behaviors, providing schools with more funding to offer healthy meals, etc.).

Ultimately, legislators believed the gravity of the short and long term consequences associated with child obesity required action by the federal government, that the country could not afford for the federal government to overlook the issue.

Theme #2: Potential Solutions Elements

As part of the *Agenda Setting* stage, Congress specifically identified the child obesity epidemic as a priority and then discussed how to utilize pre-existing resources and relationships to begin making incremental changes (Food for Thought, 2003). Congress focused on the school environment but stressed that cooperation among all sectors of society was crucial for long-term success.

School environment. Legislators identified two major factors contributing to children becoming overweight, poor nutrition and a decline in physical activity. Legislators selected the school environment as the best setting to start tackling the problem for several reasons: 1) they could influence a large number of children in a relatively short amount of time, 2) the policy infrastructure (relationship) between schools and federal guidelines already existed, and 3) schools fell within the immediate realm of Congressional influence.

Because the federal government was providing approximately 12 billion dollars in federal aid to support school breakfast and lunch programs, altering nutrition standards for school meals seemed like a logical place to begin. Although Congress had more immediate control of nutrition standards, legislators realized that a two-pronged

approach (addressing both nutrition and physical activity) would increase the likelihood of making an impact. Rep. Castle (DE), the author of the SWP mandate noted,

Last year the U.S. Surgeon General issued a report identifying schools as a 'key setting' for developing public health strategies to prevent and decrease overweight and obesity. Over the past several years, programs providing meals and snacks to children have made progress in improving lunch menus to meet Federal nutrition standards for fat and calories, but I believe more can be done to provide every child with a school environment that promotes healthy food choices and regular physical activity. (Food for Thought, 2003).

Legislators seemed to have an easier time outlining specific changes they wanted to make in school lunch menus (ex: limit fat, sugar, sodium) than in identifying action steps to increase physical activity levels. Although the physical activity element seemed more ambiguous than the nutrition component, legislators remained adamant about the importance of addressing both issues in the school environment.

Cooperation. The theme of cooperation emerged in two ways, 1) legislators worked together to develop policy solutions and 2) legislators emphasized cooperation among societal sectors. The first underlying theme related to cooperation was bi-partisan collaboration in addressing child obesity. During 2004, both the House of Representatives and the Senate were controlled by the Republican party; however, the issue of child obesity prompted a spirit of cooperation among policymakers. In a debate before the House, Rep. Boehner (OH), chairman of the Committee on Education and the Workforce said,

Mr. Speaker, I rise in support of this measure, which represents months of hard work and commitment to bipartisan cooperation. . . As we have seen during the debate today, this has been a very cooperative process, very bipartisan process, both sides of the aisle coming together to do what we can do to improve the nutrition services and nutrition programs that the

Federal Government operates for millions of American children. . . This was not a very easy bill, but it did become easy because there was good cooperation between both sides of the aisle, good understanding of the issues of what we could and could not do. And in the end, bipartisanship does work when Members put their minds together and try to come up with a product that is in the best interest of American children. (H.R. Doc 150-38, 2011)

In both Chambers, legislators passed the CNWRA (2004) with a significant majority (unanimous in the Senate). As Congressmen/women debated the bill on the floor of both the House and Senate, legislators of both parties commended each other's efforts. Rep. Castle (DE) said,

The Child Nutrition Improvement and Integrity Act is the result of cooperative efforts to strengthen nutritional services provided to needy children and families through the various child nutrition programs. I would like to thank my colleagues for their cooperation in bringing this bill forward, and I urge its passage. (H.R. Doc 150-38, 2011)

In what can be an acrimonious environment, legislators seemed to set partisan politics aside as they attended to the problem of child obesity.

A second theme related to cooperation emerged as legislators emphasized the need for societal cooperation. To have a chance at reducing growing obesity trends, Congress acknowledged the interconnected web of relationships between various social groups. Surgeon General Carmona said,

I'm very excited that businesses like Kraft, Coca-Cola, Nike and others are supporting major efforts and making significant changes to help kids make healthier choices. These and other business leaders, schools and universities, and parents across the Nation are starting to make a difference in children's health. . . all of us, government, academia, health care professionals, businesses, schools, and communities need to work together to ensure that straight forward information about healthy eating and physical activity is available (Food for Thought, 2003).

Because child obesity is a multi-factorial problem, policymakers stressed the need for all sectors of society to be involved in developing solutions instead of contributing to the problem.

I will work to foster cooperation among school administrators, food service directors, and private sector participants to ensure that this program would be administered efficiently (Rep. Renzi (AZ), (H.R. Doc 150-38, 2011)

One of the things I mentioned a little earlier was that, you know, we have been doing everything we can to partner with the private sector, as you alluded to, not just for funding, but to get their true partnership and commitment from those people who manufacture the foods, the fast-food agencies, those who make physical activity equipment, and figure out new and innovative ways to continue to bring the message to the American public, to the parents especially, and to the children to look cleverly at the markets, like the private sector does, and segment those markets. (Surgeon General Dr. Carmona, Food for Thought, 2003)

We all bear the responsibility for this problem and we all have a very important role to play. For example, parents need to model healthy eating and physical activity behavior. Parents must also guide the choices of their children when they are too young to make informed choices alone. Families and communities can make healthy eating and exercise shared activities, such as Colorado on the Move. Teachers can find ways to build nutrition and physical education into their curricula; and of course, the Federal nutrition assistance programs have a very essential and important role to play. (Eric Bost, USDA Undersecretary for Food, Nutrition and Consumer Service, Food for Thought, 2003)

The legislative discourse highlighted the need for cooperation among members of the same sector (school personnel working together, companies working together, etc.) and cooperation among sectors (parents, schools, communities and industry helping each other). (To emphasize the point, legislators included a provision for parents, administrators, teachers, staff and community members to be involved in the SWP development process.)

Legislators emphasized parental influence in contributing to child health (in both positive and negative ways) and discussed how the private sector, namely the food industry and the media, could play a role in educating parents.

But to reach parents is the key thing, because they're the ones that are preparing the meals most of the time, and turning off the TV or not, and so the thing that I'm interested in is some type of a fairly massive advertising campaign which would maybe raise this issue to the level of smoking. (Rep. Upton (NE), Food for Thought, 2003).

Because the obesity epidemic developed over time, legislators seemed committed to pursuing long range policy solutions. The 108th legislative session marked a turning point in the political conversation concerning child obesity as legislators set the stage for intervention at the federal level.

Diffusion Stage: Matching

In response to the child obesity epidemic, legislators proposed the School Wellness Policy Mandate as one innovative solution. Congress' desire to influence the school environment and foster cooperation among key groups led to a multi-faceted mandate. In his introduction of the Child Nutrition Improvement and Integrity Act, the initial bill including the SWP, Rep. Boehner (OH) said,

The bill before us strikes, I think, an important balance between our desire to promote healthy nutritional choices and physical activity among children, and the need to preserve local control for schools, communities, and States. The gentleman from Delaware (Mr. Castle), the author of this bill, has been a leader in our efforts to reduce the epidemic of child obesity by promoting a comprehensive approach that includes nutrition education and physical activity. In particular, the establishment of local wellness policies, written at the local level to reflect local needs, marks significant progress that will promote nutrition education and increase physical activity in schools while maintaining local control.

Two prominent themes were identified in the legislative record related to the *Matching* stage: 1) Local control and 2) Policy limitations.

Theme #3: Local Control

The goal of the School Wellness Policy was to provide a minimum federal standard as a way to prompt local education agencies to begin thinking about student wellness. With the intent of optimizing the influence of the policy, policymakers believed school administrators needed the ability to tailor the SWP to meet their specific needs. Rep. Castle (DE) said,

This committee (Subcommittee on Education Reform) will examine additional ways to address the important and complex issue of child obesity during the child nutrition reauthorization while supporting the role of local school districts to make decisions about the foods that are available to children in school. (Food for Thought, 2003)

Legislators hoped providing a skeletal framework (5 policy components) would prompt innovative discussions among local school personnel and increase the likelihood of SWP compliance.

The Local Wellness Policy does not extend the Department of Agriculture's jurisdiction beyond current regulation of the reimbursable school meal. Rather, local schools would be responsible for the development, implementation, and oversight of its policy. The Committee does not intend to direct local educational agencies to develop nutrition guidelines for each and every food or beverage available to students on school grounds. Rather, nutrition guidelines should be based on sound nutritional science and should take into consideration the role of school food as it relates to total daily dietary intake. . . The Committee also notes that physical activity does not have to be limited to physical education classes, and local educational agencies are encouraged to develop innovative ideas to motivate their students to increase their levels of physical activity. (H. Rep. No. 108-445, 2004)

Senator Harkin (IA): In my mind, these local wellness policies are a potentially revolutionary step towards improving children's health. These

provide real empowerment at the local school level. I look forward to seeing how schools endeavor to craft these policies and the effect that they have on school nutrition environments and children's health. I also hope that, as schools work to craft their own wellness policies, they provide fertile ground for innovation and creative thinking. It is past time that all sectors of our society focus less on treating sickness, and focus more on promoting health and preventing obesity and chronic disease. This bill, in several ways, moves toward that goal and harnesses a potent force, our schools, in the efforts to be healthier as a country. (S. Doc 150-88, 2011)

Although some legislators believed the SWP mandate should have been more stringent, others felt making the policy more rigorous would over-extend the role of the federal government.

Because the idea of mandating nutrition and physical activity standards was relatively new, legislators hoped to propose a policy that local administrators could use and implement. Ultimately, to maximize SWP implementation (to modify the school environment), legislators gave local education agencies flexibility in meeting the mandated requirements.

Theme #4: Limitations of Policy

Another identified theme relating to the *Matching* stage was the limitations of the SWP in combatting child obesity. Legislators consistently noted the SWP mandate was not intended to be a miracle solution for reversing child obesity but an initial step in a series of many.

Rep. Castle (DE): Developed in consultation with parents, students, school food service professionals, school boards and administrators, and the public, the wellness policies will serve as a catalyst for encouraging a larger dialogue on how to combat obesity. (H.R. Doc 150-38, 2011)

Instead of seeing the SWP as an all-encompassing remedy, Congress recognized the limits of schools in creating change.

While there is a limit to what local educational agencies can contribute in this area, the Committee believes that schools can play an important role in: (1) developing nutrition education programs that can provide school children with important information so that they can make informed choices with regard to the broad variety of foods and beverages available to them in schools and elsewhere; and (2) encouraging and providing the opportunities for students to engage in physical activity as a part of a healthy lifestyle (H. Rep. 108-445, 2004)

Rep. Miller (CA): We can all agree that there are no simple solutions to the issue of childhood obesity. The local wellness policy that will now be required of schools is a good start, as is a new emphasis on physical activity. However, this is not an adequate response to the health problems facing millions of children and youth. (H.R. Doc. 150-38, 2011)

Legislators intended for the SWP to be a starting place in an effort to promote child health and minimize current trends.

Discussion

Implications

The School Wellness Policy is an example of how policymakers with diametrically opposing viewpoints came together to address a serious problem. Congress felt the burden to address the issue quickly and thoroughly. Without making a series of drastic changes that they did not yet have the capacity to enforce, the 2004 legislation began the process of the federal government setting minimum standards related to child nutrition and physical activity in the school environment.

Agenda setting. Why did legislators address the child obesity epidemic?

Legislators seemed to understand the scope and magnitude of the problem and felt a personal responsibility to address the issue. First, the legislative discourse was rich in

discussions relating to the consequences of child obesity, both for overweight and obese children on an individual basis and for society as a whole. Legislators discussed the litany of personal ramifications for obese children, such as poor academic performance, potential emotional harm, and the risk of developing chronic health conditions at an early age. On a societal level, policymakers highlighted the rising health care costs associated with the increased incidence of chronic disease. Legislators rationalized that America could not afford (literally) for the federal government to overlook the issue. Second, legislators decided to tackle the issue by addressing the two of the main causes of obesity, poor nutrition and lack of physical activity. Because federal funds provided school meals, legislators decided the most logical place to begin addressing the issue was the school environment. Third, legislators made significant efforts to collaborate across party lines and to find practical solutions despite philosophical differences. Fourth, Congress stressed the idea that improving child health would only result from change on a societal level.

Matching. How did legislators address the child obesity epidemic? Legislators hoped to empower schools at the local level. The School Wellness Policy was intended to serve as a catalyst for conversations about child health between school administrators, parents and community members on a local level. Importantly, legislators acknowledged their limited understanding of local education agencies' daily operations and their inability to regulate stricter guidelines at the time and as a result provided a minimum standard.

Instead of placing the burden of change on school districts, policymakers provided a context in which to understand the SWP mandate. Recognizing the limitations of the school environment in creating behavior change, legislators viewed the SWP as a starting place, not as an end point.

Evidence that the SWP was used as a starting point to combat child obesity, since the initial mandate, the federal government has not only strengthened efforts to enforce the SWP but stricter standards addressing the school environment are now in place (Healthy, Hunger- Free Kids Act, 2010). The SWP called the attention of parents, teachers, and school administrators to the child obesity problem. Increased attention to the school environment has also engaged the private sector in the fight against child obesity as the food industry has since started cooperating with federal guidelines and helped in developing solutions to target overweight and obese children. As the federal government empowered states and local education agencies to begin setting their own standards (in some cases stricter than federal guidelines), the food industry began tailoring their food packages to meet the more stringent standards (example: only selling 2% milk to local education agencies), (HHFKA, 2010).

The context in which the SWP was made is frequently overlooked in the current research (Chapter II). To accurately evaluate School Wellness Policy implementation, it is essential for researchers to understand the original legislative intent, otherwise implementation and evaluation study findings may be misplaced.

Limitations

The findings presented in this study offer a snapshot of the themes presented in the legislative discourse specifically related to School Wellness Policies from a very specific theoretical perspective. Given the magnitude of the text included in the legislative discourse, the researcher's theoretical framework considerably narrowed the scope of the analysis. Because the study only analyzed documents associated with the original bill, findings cannot be generalized to the discourse of other legislative sessions. Since the CNWRA was passed in 2004, the policy has been altered (HHKFA, 2010); thus, future research would benefit from studying the changes made to the original policy and related federal discourse.

Recommendations

This study is unique because it analyzes the initial political discourse about a health policy from a health promotion perspective. Instead of just focusing on policy implementation and outcomes, the field would benefit from increased attention to research addressing the political climate and context in which a given policy is created.

In relation to child obesity, the legislative discourse was overwhelmingly clear in that Congress not only viewed the child obesity epidemic as a problem but that the federal government needed to use policy as a means to influence child behavior. However, questions still remain as to how Congress can best utilize resources and allocate funding. Congress could benefit from the unique and informed perspective of health promotion professionals in making such decisions.

The SWP mandated very specific changes to the school environment but the policy has also resulted in inadvertent modifications in other societal sectors. Future research would benefit from studying changes made as a result of the SWP to areas other than the school environment to inform future policy decisions.

Because public policy targets social environments, governments (federal, state and local) play an influential role in facilitating social change. Policymakers challenge the status quo by using policy as an avenue to implement new ideas and possess a unique authority as their decisions influence health behavior on a large scale. Thus, the field of health promotion should be engaged in conversations and research addressing not only policy implementation and policy outcomes but also the policy initiation process itself.

CHAPTER III

SCHOOL WELLNESS POLICY LITERATURE: A SYSTEMATIC REVIEW

Introduction

Enacting a policy is arguably one of the most effective ways to create widespread behavior change in a relatively short amount of time. The School Wellness Policy (SWP) mandate, a provision of the Child Nutrition and WIC Reauthorization Act (CNWRA) of 2004 (P.L. 108-265, 118 Stat. 729), is noteworthy as it marks one of the first innovative and extensive efforts of the U.S. government to address the child obesity epidemic and the influence of the school environment on child health (McDonnell & Probart, 2008). Lawmakers hoped implementing SWPs at the local level would allow each local education agency (LEA) to tailor the mandate to address the health challenges unique to their students and school environments (see Chapter II). As the CNWRA stipulated, all LEAs receiving funding for the free/reduced breakfast and lunch programs (programs originally authorized by the Richard B. Russell National School Lunch Act (79 P.L. 396, 60 Stat. 230) or Child Nutrition Act of 1966 (P.L. 89-642, 80 Stat. 885) were required to establish a SWP no later than the first day of the 2006-2007 school year. The mandate stipulated that each SWP:

1. Includes goals for nutrition education, physical activity, and other school-based activities that are designed to promote student wellness in a manner that the local educational agency determines is appropriate,
2. Includes nutrition guidelines selected by the local educational agency for all foods available on each school campus under the local educational agency during the school day with the objectives of promoting student health and reducing childhood obesity;

3. Provides an assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture
4. Establishes a plan for measuring implementation of the local wellness policy, including designation of 1 or more persons within the local educational agency or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy; and
5. Involves parents, students, representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy.

Although public policy has the potential to positively influence health behavior on a large scale, a policy is effective to the extent it is correctly implemented (Longest, 2006; Probart, McDonnell, Jomaa, & Fekete, 2010). Traditionally, policy implementation researchers vaguely define the phrase “policy implementation” (DeLeon & DeLeon, 2002). However, the term is used more generically to refer to the all-encompassing concept of policy operation that includes a myriad of activities related to the actual enactment of a policy (Longest, 2006). Not only is the definition of policy implementation used ambiguously but researchers inconsistently operationalize variables of interest in implementation studies (O’Toole, 2000). The stages of Everett Rogers’ Diffusion of Innovations (DOI) in Organizations Theory employ a clear definition of the implementation process while thoroughly accounting for the various operation processes inherent in policy implementation.

To date, no systematic literature reviews have been conducted concerning School Wellness Policies. Evaluating the literature provides an analytical overview of the current research on SWPs and highlights gaps in the existing literature to inform future

inquiry. *The purpose of this study was to systematically examine the literature on School Wellness Policy implementation by using Diffusion of Innovations Theory (the organizational model) as a framework. The following research questions served as a guide for the presented systematic review: How does the current published, peer-reviewed research literature characterize the SWP mandate? Which diffusion stages are accounted for in the existing literature on School Wellness Policies?*

Theoretical Framework

Everett Rogers defines diffusion as, “the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 1962). In the case of SWPs, diffusion is the process in which the innovation (the SWP) was communicated to and adopted by each local education agency. According to Rogers (2003), the diffusion process occurs in two distinct phases, Initiation (how the innovation is developed) and Implementation (how the innovation is used) (see Figure 1.1).

The Initiation phase includes two stages of policy development that are beyond the scope of this paper given the innovation has already been defined by researchers as the SWP. This study only addressed the second diffusion phase, Implementation, which consists of the events, actions and decisions involved in using the innovation (Rogers, 2003).

The first implementation stage, re-structuring, takes place when either the innovation or the organization changes to accommodate a better fit between the two (Meyer & Goes, 1988). Both the innovation and the organization usually change during

the diffusion process. Applied to this study, local education agencies may reorganize internally by creating new positions or re-defining job descriptions and responsibilities to facilitate successful SWP implementation. Similarly, the federal mandate includes general guidelines that can be tailored for each local education agency, allowing school administrators to reshape the innovation to accommodate their specific needs and organizational structure.

Clarifying, the second implementation stage, occurs when an innovation is extensively utilized until the meaning of the innovation becomes clear to an organization's members (Rogers, 2003). Communication between school administrators, school principals, and teachers who are expected to abide by the policy is part of the clarification process. Through ongoing discourse between district administrators and district employees, administrators, teachers and staff in each school are more likely to understand the policy's purpose for addressing child overweight and obesity (to modify the school nutrition and physical activity environment). In the clarifying stage, members socially construct meaning and common understanding around a new innovation (Meyer & Goes, 1988; Yanow, 1993). In communicating and interacting with colleagues in the same school or other schools in the district, an administrator or teacher determines what the policy actually means (Yanow, 1993). Over time, the innovation gradually embeds in the organization's structure.

Routinizing, the final stage in the implementation phase, is complete when members of an organization no longer consider an innovation new because it has been completely assimilated into an organization's regular activities (Rogers, 2003).

Routinization, also called institutionalization, occurs in school districts when compliance with the SWP becomes routine. The impact of the innovation can be assessed once it has been fully adopted by the organization. Oldenberg and his colleagues identify institutionalization studies as a weakness in the current literature and suggest it may be the most important stage in determining the actual effectiveness and sustainability of health promotion interventions (Oldenburg, Sallis, Ffrench, & Owen, 1999).

Methods

Journal Selection and Search Terms

The electronic databases EBSCO (Academic Search Complete) and OVID were used to explore the existing literature related to School Wellness Policies. More specifically, identifying the academic field of *Health* limited the EBSCO databases to CINAHL, Agricola, and Eric and the OVID databases to Medline and CAB Abstracts. The key words *school (elementary, junior/middle, high, primary, and secondary), district (local), wellness, and policy* combined by Boolean connections were used as search terms for each database (see Figure 3.1 for search results).

Inclusion/Exclusion Criteria

The initial search yielded 90 articles, 44 of which were duplicates (see Figure 3.2 for PRISMA flow chart). Six additional records were identified by hand-searching reference lists and searching within the journals publishing the most articles related to SWPs. Fifty-two articles were initially reviewed at the abstract-level and were required to meet the following five criteria:

1. Written in English
2. Published after 2004

3. Published in a peer reviewed journal
4. The *primary* purpose of the article related to School Wellness Policies
5. The article presented results of an empirical study

Because Congress mandated SWPs be implemented in local education agencies in the U.S., articles addressing the mandate were required to be in English. Articles with a publication date prior to 2004 were automatically excluded because the Child Nutrition and WIC Reauthorization Act was enacted in 2004; thus, any study concerning school policies published prior to the mandate did not address School Wellness Policies specifically. All 52 articles met the first two criteria. Reports published by government agencies and non-profit organizations were also excluded from the review in an attempt to filter potentially biased results as they are not subjected to the peer review process. Two reports were eliminated because they were not published in peer reviewed journals. The fourth screening criterion eliminated the most articles from the review (n =15). Several studies were tagged in the initial search because the term “School Wellness Policy” was included in the implication/ discussion section of the article abstract; however, the primary purpose of the study was not directly related to School Wellness Policies.

Lastly, 10 studies were eliminated because they were not empirically based. Examples of articles eliminated by the last criterion included personal commentaries, position statements of various health organizations and various application based discussions for practitioners. After the initial review at the abstract level, the inclusion status of four articles could not be determined so they were screened using criteria 3-5 at the full-text level. All four studies were eliminated after screening the full-text, 3 of the

Search	Database	Vendor	Number retrieved	Internal dups	External dups	New articles added
1	CAB Abstracts	Ovid	27	1	0	26
2	Medline	Ovid	28	0	16	12
3	Agricola	EBSCO	15	0	15	0
4	database 4	EBSCO	8	0	6	2
5	EBSCO	EBSCO	12	0	6	6
Totals			90	1	43	46

Search	Expanded search methods	Number retrieved	Duplicates	New articles added
1	Reference lists/ citing articles	0	0	0
2	handsearching	6	0	6
totals		6	0	6

Figure 3.1. Systematic Literature Review: Search Results

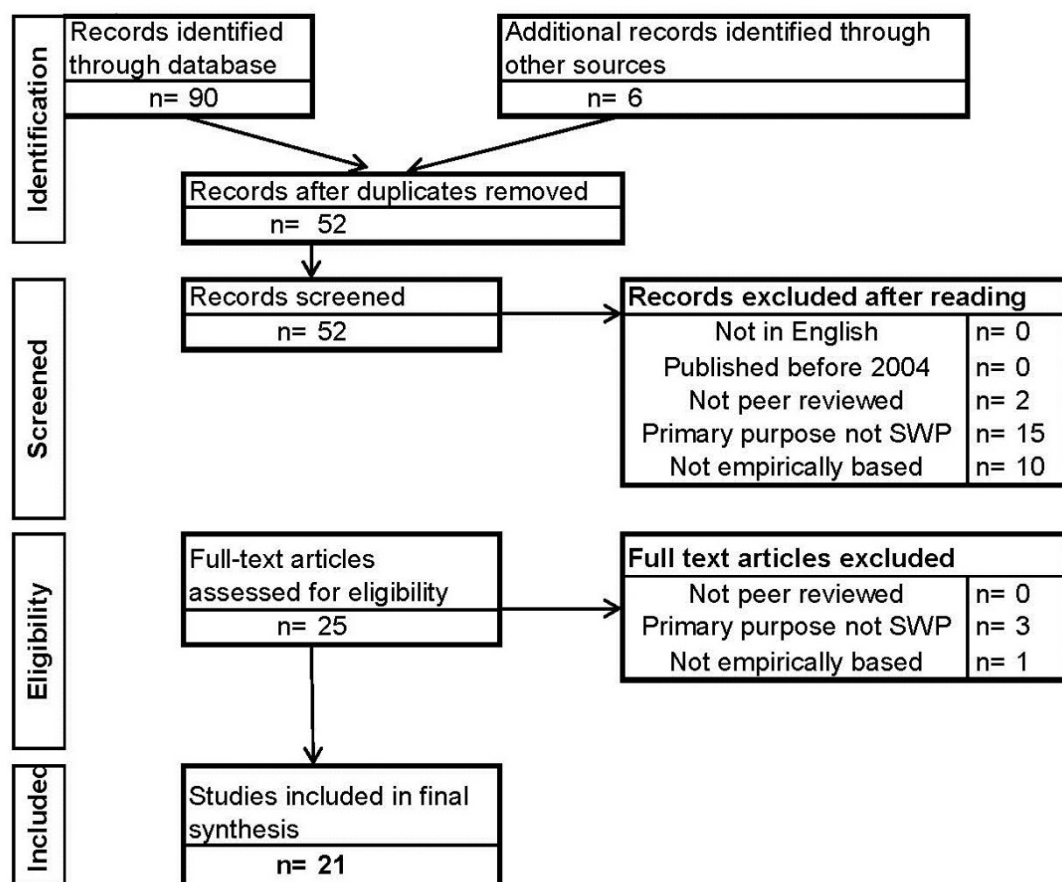


Figure 3.2. PRISMA Flow Chart

articles did not specifically address School Wellness Policies (criterion 4), and 1 article was not empirically based (criterion 5). Twenty-one articles were included in the final review. (Articles were read in chronological order and assigned an ID #, references for the final 21 articles labeled with ID # are provided in Table 3.1).

Data Abstraction

Data were abstracted from each article according to the Matrix Method (Garrard, 2011), developed as a means of systematically reviewing health sciences literature (see Appendix A for full data abstraction matrix). Fields used to describe general characteristics included the journal of publication, authorship, theoretical framework, research design and method, and study participants.

To address the initial research question (*How does the current published, peer-reviewed research literature characterize the SWP mandate?*) data were abstracted to assess how the authors presented and interpreted the original SWP mandate. Additional fields included citation of the policy itself, number of policy components included in each study's Introduction, which policy components served as the study's framework and how the authors defined the purpose of the policy. Lastly, abstracted data were used to categorize each study into one of Rogers' three diffusion stages to answer the second research question (*Which diffusion stages are accounted for in the existing literature on School Wellness Policies?*).

Policy citation. Policy citation was assessed by looking for mention of the original mandate (CNWRA) both within the article itself and citation of the policy in the reference section.

Table 3.1. Systematic Literature Review: Reviewed Article References

ID #	References
13	Agron, P., Berends, V., Ellis, K., & Gonzalez, M. (2010). School wellness policies: perceptions, barriers, and needs among school leaders and wellness advocates. <i>Journal of School Health</i> , 80(11), 527-535.
15	Belansky, E. S., Cutforth, N., Delong, E., Litt, J., Gilbert, L., Scarbro, S., Beatty, B., Romaniello, C., Brink, L., & Marshall, J. A. (2010). Early effects of the federally mandated local wellness policy on school nutrition environments appear modest in Colorado's rural, low-income elementary schools. <i>Journal of the American Dietetic Association</i> , 110(11), 1712-1717.
7	Belansky, E. S., Cutforth, N., Delong, E., Ross, C., Scarbro, S., Gilbert, L., Beatty, B., & Marshall, J. A. (2009). Early impact of the federally mandated local wellness policy on physical activity in rural, low-income elementary schools in Colorado. <i>Journal of Public Health Policy</i> , 30(S1), 141-160.
21	CHRIQUI, J. F., & CHALOUPKA, F. J. (2011). Transparency and Oversight in Local Wellness Policies. <i>Journal of School Health</i> , 81(2), 114-121.
18	CONKLIN, M., LAMBERT, C., BRENNER, M., & CRANAGE, D. (2009). Relationship of Directors' Beliefs of Perceived Organizational Support and Affective Commitment to Point in Time of Development of School Wellness Policies. <i>Journal of Foodservice Business Research</i> , 12(2), 110.
20	Jomaa, L. H., McDonnell, E., Weirich, E., Hartman, T., Jensen, L., & Probart, C. (2010). Student Involvement in Wellness Policies: A Study of Pennsylvania Local Education Agencies. <i>Journal of Nutrition Education and Behavior</i> , 42(6), 372-379.
14	Lambert, L. G., Monroe, A., & Wolff, L. (2010). Mississippi elementary school teachers' perspectives on providing nutrition competencies under the framework of their school wellness policy. <i>Journal of Nutrition Education and Behavior</i> , 42(4), 271-276.
9	Longley, C., & Sneed, J. (2009). Attitudes of school foodservice directors about the potential benefits of school wellness policies. <i>Journal of Child Nutrition and Management</i> , 33(1), unagnate.
8	Longley, C. H., & Sneed, J. (2009). Effects of federal legislation on wellness policy formation in school districts in the United States. <i>Journal of the American Dietetic Association</i> , 109(1), 95-101.
1	McDonnell, E., Probart, C., & Weirich, J. E. (2006). School foodservice directors' perceptions and concerns about local wellness policy development, implementation, and enforcement. <i>Journal of Child Nutrition and Management</i> , 30(1),
17	McDonnell, E., & Probart, C. (2008). School wellness policies: employee participation in the development process and perceptions of the policies. <i>The Journal of Child Nutrition Management</i> , 32(1)
3	Metos, J., & Nanney, M. S. (2007). The strength of school wellness policies: one state's experience. <i>Journal of School Health</i> , 77(7), 367-372.
5	MoagStahlberg, A., Howley, N., & Luscri, L. (2008). A national snapshot of local school wellness policies. <i>Journal of School Health</i> , 78(10), 562-568.
6	Molaison, E. F., Carr, D. H., & Federico, H. A. (2008). School wellness policy implementation: attitudes of school professionals and parents in elementary schools. <i>Journal of Child Nutrition and Management</i> , 32(2).
16	Namasivayam, K., Conklin, M., & Lambert, C. U. (2007). Organizational factors influencing school nutrition directors' implementation of wellness policies. <i>The Journal of Child Nutrition Management</i> , 31(2).
4	Probart, C., McDonnell, E., Weirich, J. E., Schilling, L., & Fekete, V. (2008). Statewide assessment of local wellness policies in Pennsylvania public school districts. <i>Journal of the American Dietetic Association</i> , 108(9), 1497-1502.
19	Probart, C., McDonnell, E., Jomaa, L., & Fekete, V. (2010). Lessons From Pennsylvania's Mixed Response To Federal School Wellness Law. <i>Health Affairs</i> , 29(3), 447.
11	Schwartz, M. B., Lund, A. E., Grow, H. M., McDonnell, E., Probart, C., Samuelson, A., & Lyle, L. (2009). A comprehensive coding system to measure the quality of school wellness policies. <i>Journal of the American Dietetic Association</i> , 109(7), 1256-1262.
10	Seo, D. (2009). Comparison of school food policies and food preparation practices before and after the local wellness policy among Indiana high schools. <i>American Journal of Health Education</i> , 40(3), 165-173.

Table 3.1. Continued

ID #	References
2	Serrano, E., Kowaleska, A., Hosig, K., Fuller, C., Fellin, L., & Wigand, V. (2007). Status and goals of local school wellness policies in Virginia: a response to the child nutrition and WIC Reauthorization Act of 2004. <i>Journal of Nutrition Education & Behavior</i> , 39(2), 95-100.
12	Snelling, A. M., & Kennard, T. (2009). The impact of nutrition standards on competitive food offerings and purchasing behaviors of high school students. <i>Journal of School Health</i> , 79(11), 541-546.

Policy components. Data were abstracted to identify which of the policy components were included in the Introduction of each article. The following five key policy components are outlined by the SWP mandate:

- 1) Nutrition education and physical activity
- 2) Nutrition guidelines for foods available on school campuses
- 3) Compliance with USDA restrictions
- 4) SWP implementation and identification of one person responsible for SWP implementation
- 5) Involvement of key stakeholders (parents, teachers, students, school administrators, and the public)

The purpose statement of each article was used to determine which policy component/s served as the focal point of the study.

Purpose of the SWP. In analyzing the original bill and the documents included in the legislative history, specifically House Report 108-445, the SWP mandate was developed in reaction to children who are obese or at risk for becoming obese (see Chapter II). School Wellness Policies were designed to combat the child obesity epidemic by altering the school environment, specifically by improving nutrition education and increasing opportunities for physical activity. The four key elements include:

1. Child obesity epidemic
2. Prevention of child obesity
3. Modification of the school food environment
 - a. Improving nutrition education
 - b. Increasing opportunities for physical activity

To assess how authors interpreted and explicitly presented the purpose of the SWP mandate, data on the intention of the policy were assessed according to the rationale of the original legislation.

Diffusion stage criteria. Boyatzis's (1998) theory-driven code method was used to develop inclusion/exclusion criteria to group the studies by diffusion stage. The codes were developed by matching elements of the theory with the purpose statements of the studies themselves. Boyatzis (1998) outlined the following three steps to develop a theory driven code: 1) generate a code, 2) review and revise the code within the specific context, and 3) determine the reliability of the code.

The code included four main categories, each of the three diffusion stages of interest and a category representing studies encompassing more than one diffusion stage: 1) re-structuring/re-defining, 2) clarifying, 3) routinizing, and 4) multiple stages. The definitions developed by Rogers for each diffusion stage were modified to fit the specific context of SWP implementation (modified definitions provided below).

Lincoln's & Guba's (1985) constant comparative method was used to develop each of the four categories. Each study was initially grouped by similarity of purpose, yielding approximately eight groups. Groups were then combined to develop categories representing each of the three diffusion stages (categories and topics subsumed within each category outlined below). For example, studies addressing policy content initially formed a group which then became a subset of studies within the larger re-defining/re-structuring diffusion stage category. Studies were preliminarily assigned to a category based on their fit with the overarching definition of the diffusion stage represented by the category. The initial code (inclusion criteria) was as follows:

- 1) The ***re-structuring*** category assessed the processes related to the modification of the innovation itself (SWP) and organizational changes made to accommodate the policy.
 - a. LEA organizational infrastructure and job responsibilities

- b. Policy content (both the assessment of policy goals and strength of policy language)
 - c. Policy planning and development
- 2) The ***clarifying*** category addressed the meaning making process that occurred among school personnel within the LEA while attempting to implement the SWP.
 - a. Barriers to policy implementation
 - b. Perceived organizational support
 - c. Perceived *potential* impact of SWP
 - d. Process of disseminating information from the district to the classroom
- 3) The ***routinizing*** category focused on policy evaluation of both perceived and real changes in the school environment as a result of the School Wellness Policy.
 - a. Perceived impact of SWP
 - b. Actual impact (changes made in LEA) of SWP on school environment
- 4) The last category included all of the articles that accounted for more than one diffusion stage.

After placing all 21 studies into an initial category, articles were shuffled into a random order and the sorting process was repeated to review and revise the code (Boyatzis, 1998). Using the code as a guide for the second sort, two studies were assigned to a different category than during the initial sort. The process was repeated a third time to eliminate discrepancies in study placement between the second and third sort. The articles were sorted a total of four times with no discrepancies in study placement between the second, third and fourth sorts.

To determine the reliability of the code, a colleague (trained in qualitative analysis) coded 20% (n=4) of the studies according to the developed inclusion criteria. Microsoft Excel's random sorting function was used to randomly select four studies. The inter-rater was in 75% agreement with the original code assigned with a Cohen's kappa

of 0.67 (Landis & Koch, 1977). The single study causing a discrepancy included multiple (two) diffusion stages in which the second coder identified one of the two stages in agreement with the original coder. Differences were settled and raters (original rater and inter-rater) agreed with the final results presented in this study.

Results

General Characteristics

The reviewed studies were published in eight different journals (see Table 3.2), with 17 of the studies representing only four journals and the remaining 4 studies representing one journal each. Thus, a bulk of the articles were published in the same four journals, all relating to either nutrition or school health audiences. Over half of the studies (57%) were published by duplicate sets of authors (authors who co-authored other studies included in the original 21 articles). Conversely, only 9 (42%) articles represented a single publication by the author included in the review.

Considering research design, only one article employed a pure qualitative methodology with 14 (67%) studies using quantitative methods and six (28.5%) using a mixed methods approach. A majority of the studies ($n = 13$, 62%) utilized state-wide samples while 7 (33.33%) studies used nationally representative data sources ($n=7$). One study limited the sample to four schools in the same county (5%). Only two (9%) studies employed an explicit theoretical framework to study theory driven constructs related to SWP implementation. Both studies utilized theories involving organizational dynamics, one study applied Organizational Change Theory and the other Organizational Support Theory.

Table 3.2. Journals

Journal	# of articles	% total
Journal of Child Nutrition and Management	5	23.81
Journal of School Health	5	23.81
Journal of Nutrition Education and Behavior	3	14.29
Journal of American Dietetic Association	4	19.05
Journal of Public Health Policy	1	4.76
Health Affairs	1	4.76
Journal of Foodservice Business Research	1	4.76
American Journal of Health Education	1	4.76
	21	

Table 3.3. Participants

Participants of Study	#	%
Food Service Directors	6	28.57%
Policy (itself)	6	28.57%
Multiple perspectives	5	23.81%
Teachers	1	4.76%
Students	1	4.76%
Superintendent	1	4.76%
Principals	1	4.76%
Total	21	

Six studies (29%) reported the perspectives of food service directors/school nutrition program directors exclusively (see Table 3.3). Teachers, students, superintendents and principals were each the target population of one study respectively. Five studies (24%) gathered data from multiple sources such as superintendents, principals, teachers, school board members, food service directors, and state food service personnel.

Policy citation. In 20 of the 21 studies, the authors specifically named the Child Nutrition and WIC Reauthorization Act of 2004 as the original legislation requiring School Wellness Policies; however, six studies (29%) neglected to include the original legislation (Pub. L. No. 108-265, 118 Stat. 729) as a reference.

Policy components. To provide a context for the SWP mandate, only 53% (n = 11) of the 21 studies specifically included all five mandated policy components in the Introduction; one (5%) study introduced four of the components, three studies (14%) explained the single policy component being evaluated and two studies (10%) failed to specifically mention any of the required policy components (see Table 3.4).

Although over half of the studies introduced all five policy components in providing a context for the School Wellness Policy directive, only four studies (19%) actually analyzed the entire policy, all four of which dealt specifically with policy content. A majority of the studies focused on more than one policy component in their analyses (n = 12, 57%). School Wellness Policy implementation was the policy component studied most frequently (67%, n = 14). The policy component concerning nutrition education

Table 3.4. Introduced Policy Components

Article ID	Cited original policy	Number of policy components included in intro?
1	X	5
2	X	5
3	X	5
4		5
5	X	5
6	X	5
7	X	5
8		2
9		0
10		2
11		5
12	X	2
13	X	4
14	X	1
15	X	1
16	X	0
17	X	5
18	X	5
19		2
20	X	1
21	X	5
TOTALS		
Cited 15 (71.43%)		5 = 11 (52.38%)
Not cited 6 (28.57%)		4 = 1 (4.76%)
		2 = 4 (19.04%)
		1 = 3 (14.29%)
		0 = 2 (9.52%)

and physical activity was evaluated in 57.14% of the studies (n = 12). The third policy directive, nutrition guidelines for available foods on campus, served as the focal policy component in 11 studies (52%). The component concerning compliance with USDA (United States Department of Agriculture) guidelines was examined the least (29%, n = 6) and in the studies primarily concerned with policy content. Table 3.5 fully outlines the results.

Purpose of the SWP. Table 3.6 presents the results of how each study defined the purpose of the SWP. Only two studies introduced the SWP in its entirety by mentioning child obesity, prevention of child obesity and modification of the school environment (namely improving nutrition education and increasing opportunities for physical activity). Three (14%) studies mentioned child obesity as the only impetus for SWPs. Thirteen (61%) studies addressed the school environment as the primary target of the policy with 10 (48%) studies mentioning both healthy eating and physical activity as elements of the school environment. Five (24%) studies addressed healthy eating as a primary factor influencing the school environment but neglected to mention physical activity as the other key influence. Only three (14%) studies included the prevention component in explaining the SWP's intent and three studies failed to specifically state any intent of the original mandate.

Diffusion stages. Lastly, the studies were sorted into categories developed from the three Implementation stages of Diffusion of Innovations Theory. Of the 21 studies, 43% (n = 9) were included in the restructuring category, 10% (n = 2) in the clarifying category, 14% (n = 3) in the routinizing category, and 33% (n = 7) in the multiple stages

Table 3.5. Focal Policy Component

ID #	Focal Policy Component/s Addressed				
	1. Nutrition education & Physical activity 57.14 % (n=12)	2. Nutritio n guidelin es 52.38% (n=11)	3. USDA guideli nes 19.04 % (n=4)	4. Implementati on/ Person Responsible for implementatio n 66.66% (n=14)	5. Stakeholde r involveme nt 47.61% (n=10)
1				X	
2	X	X		X	X
3	X	X	X	X	X
4	X	X	X	X	X
5	X	X	X	X	X
6				X	
7	X			X	
8	X	X		X	X
9	X	X			
10		X			
11	X	X	X	X	X
12		X			
13	X	X		X	X
14	X			X	
15		X			
16				X	
17	X				X
18				X	
19				X	
20					X
21	X				X

Table 3.6. Purpose of SWP

ID #	Obesity 15 (71.43%)	School Env. 13 (61.90%)	Prevention/ Promotion 3 (14.28%)	Address Health Eating & Physical Activity both =10 (47.62), HE only = 5 (23.81)	Multiple categories 14 (66.66%)	Implicit 3 (14.29%)
1	X	X		X	X	
2						X
3		X		X	X	
4	X					
5	X	X		X	X	
6	X	X	X	X	X	
7	X			X	X	
8	X	X		X	X	
9	X	X		X(not PA)		
10	X	X	X	X(not PA)	X	
11						X
12	X	X		X(not PA)	X	
13	X	X	X	X	X	
14		X		X(not PA)	X	
15		X		X	X	
16	X	X		X(not PA)	X	
17	X					
18	X			X	X	
19	X					
20	X	X		X	X	
21						X

category. Of those in the multiple stages category, 86% (six of the 7) included the restructuring stage and 43% (three of seven) included elements of all 3 stages. Complete results are presented in Table 3.7.

Discussion

To date, this paper presents the first systematic literature review on School Wellness Policies. This assessment provided a comprehensive analysis of some of the current literature while identifying directions for future research. The results addressed three key characteristics of the reviewed literature: 1) a uniformity in methodology, 2) the role of context in analyzing policy implementation, and 3) a lack of information related to policy clarification.

Finding One: Uniformity in Methodology

Over half of the studies in review were published by various sets of authors (the same authors contributing to multiple articles). In several cases, sets of authors presented the results of a single research project across multiple articles. Grant funding allocated to university research labs and non-profit organizations to specifically study SWPs helped explain repeated authorship.

Producing multiple publications from a large research study is common practice. However, the practice becomes more noteworthy when the literature review is limited to a small number of articles that share methodological limitations and potential bias. Researchers' personal agendas and interests inherently shape how a policy is studied, where a policy is studied, and which specific policy components serve as the unit of analysis. Grant funding provides vital resources but also plays a role in shaping the

Table 3.7. Diffusion Stages

	Stage			
	Re-structuring	Clarifying	Routinizing	Multiple
initial sort #	12	1	2	6
re-sort #	9 (42.86%)	2 (9.52%)	3 (14.28%)	7 (33.33%)
% in all studies	15 (71.43%)	8 (38.08%)	7 (33.33%)	NA
criteria	1. purpose = policy development, planning	1. perceived potential impact of SWP	1. perceived change in practice/school environment after policy implementation	1. more than one diffusion stage addressed
	2. district infrastructure (job req/description)	2. organizational support	2. actual impact/ change in practice of school environment after policy implementation	
	3. addresses policy content = how LEAs modify the innovation policy = innovation	3. barriers to implementation		
		4. process of disseminating information from district to classroom		

literature on SWPs. Because many of the studies stemmed from similar funding sources, a majority of the reviewed articles addressed nutrition related topics and as a result were published in journals primarily geared toward nutrition-based professionals. Although nutrition guidelines were included as a primary component of the SWP, the SWP also includes directives regarding nutrition education and physical activity; thus, current discussions concerning SWP implementation would benefit from the contribution of health professionals in other disciplines.

Only one study employed a pure qualitative methodology, highlighting a lack of in-depth qualitative inquiry as it relates to SWP implementation. Cross-sectional studies using nationally representative and state-wide data sets were used to describe implementation efforts of LEAs at one point in time. According to Herriott & Firestone (1983) and O'Toole (2000), using a snapshot approach fails to account for the process of change that occurs over time when putting a policy into practice. Thus, this study exposed a lack of qualitative analyses addressing local implementation factors. Using a case study approach would help account for the perspectives of various stakeholders in one local education agency and provide a comprehensive explanation of SWP implementation processes occurring since the policy's inception (Herriott & Firestone, 1983).

Another similarity among the reviewed studies was a primary focus on the perspectives of food service directors. Policymakers included the fifth component of the School Wellness Policy mandate (requiring LEAs to involve parents, teachers, students, school administrators, and the public in both the creation of the policy and the evaluation

plan) with the hope that engagement by various stakeholder groups would result in a stronger, more comprehensive SWP and increase community awareness and cooperation in promoting child health (H.R. 108-445 on H.R. 3873). Unfortunately, survey data (the primary data collection presented in the reviewed literature) represent the perspective of only one person involved in SWP implementation for each local education agency. In the studies that used mixed method approaches, school foodservice directors were used as the primary target population for the qualitative component. Given the policy was specifically intended to engage a variety of audiences, further analysis of the policy could benefit from viewpoints other than food service directors and school administrators alone such as parents, students and community members.

Finding Two: Role of Context in Analyzing Policy Implementation

Secondly, the results highlight the importance of analyzing policy implementation within the context of the original mandate. According to DeLeon & DeLeon (2002), policy is correctly evaluated in light of the context in which it is intended to be implemented. Other researchers suggest that contextual details are vital to interpreting findings correctly and discussing resulting implications (Collins, Green, & Hunter, 1999). Thus, failing to address the policy in its entirety may lead to 1) incorrect evaluation and/or 2) incorrect interpretation of findings, leaving both researchers and readers to erroneously assume a policy is being implemented correctly or resulting in the desired impact. Ultimately, it is important for researchers to study SWP implementation in context because the resulting research plays an important role in shaping the policy

process by informing legislators and invested stakeholder groups of the policy's success (Longest, 2006).

One study completely failed to mention the Child Nutrition and Reauthorization Act altogether, and although six other studies mentioned the Act, they neglected to cite the legislation as a reference. In December of 2010, the Healthy, Hunger-Free Kids Act replaced the Child Nutrition and WIC Reauthorization Act of 2004. Although the specific SWP components involved in the original mandate did not change, evaluation procedures were altered (Pub. L. No. 111-296). Results of this study served as a reminder that because legislation is subject to change, authors should look to the original policy and related political discourse as the primary source of relevant contextual information.

Although assessing how authors' defined the SWP may seem inconsequential, the purpose of the legislation informs how researchers evaluate policy implementation and long term outcomes (Yanow, 1995). The language of this specific legislation is important because it implies an effort by the federal government to not only improve the health of children who are currently obese, but also prevent obesity for children who are at risk. Although most of the studies included in this review were correct in attributing the child obesity epidemic with prompting the innovative legislation, only two studies explained the complete context in which SWPs were designed to make an impact. Even if a study is designed to evaluate only one policy component, providing a complete frame of reference in which to view findings is essential.

Finding Three: Lack of Information Related to Policy Clarification

Since time is certainly a factor when studying policy implementation, most of the research was characterized by the re-defining/re-structuring diffusion stage. However, the longer the SWP is in place, the research focus will likely shift toward policy routinization and impact. Collectively, the 21 studies reviewed vaguely addressed the clarifying stage. Rogers' clarifying stage accounts for the "how?" in policy dissemination (Rogers, 2003). The literature reviewed here provides little explanation of the process that occurred between LEAs receiving the SWP mandate and making changes in the school environment. The clarifying stage accounts for the gray area of events that occurred between administrative offices and classroom settings. Only one study addressed how the SWP actually impacted teachers (Lambert, Monroe, & Wolff, 2010). The middle diffusion stage may be the most important in determining which LEAs were successful in implementing the SWP by explaining how district administrators communicated with school district personnel. Given the ambiguous nature of the clarifying process, researchers may be less likely to adequately capture the construct with quantitative measures.

Strengths and Limitations

This systematic literature review provides an analysis of the empirically based literature specifically related to SWPs. As only two of the studies included theoretical explanations, a significant strength of this review is the theory driven approach in which implementation constructs were clearly defined and applied to the existing research. Outlining a clear theoretical framework allows future researchers to apply the theory in

the same way or build on this review. Although the review employed extensive search criteria, it is certainly possible an empirically based study concerning SWPs was overlooked or that an article was prematurely eliminated from the review.

Conclusion

Policy implementation research serves a vital role in informing the policy process. Policymakers (legislators, the President, bureaucrats, and other staff) and policy stakeholders (interest groups, the voting public, industry, etc.) look to policy research to help refine and change current policies (Longest, 2006). Invested parties also use research as a justification for the development of new policies and to provide the rationale for elimination of ineffective policies. So, it is essential that policy implementation is measured accurately and in keeping with the original intent of the policy. As researchers, it is easy to base policy implementation studies on secondary issues and interests that are of greater interest to our respective fields than the policy itself. Over time, the intent of the original policy runs the risk of being watered down if not analyzed in its original and complete context. Failing to clearly define implementation constructs may result in misguided conclusion as “implementation” may mean different things to different audiences.

CHAPTER IV

SCHOOL WELLNESS POLICY IMPLEMENTATION: A CASE STUDY

Introduction

In 2004, President George W. Bush signed into law the Child Nutrition and WIC Reauthorization Act (CNWRA). A majority of the bill merely extended the programs outlined in previous legislation concerning child nutrition programs (e.g., school meal programs, summer food service, child care food programs) (Levine, 2008). However, legislators also included a progressive new provision intended to address the child obesity epidemic (McDonnell & Probart, 2008). Namely, a mandate outlined a multifaceted approach to modify the school environment by increasing opportunities for physical activity and healthy eating (Belansky et al., 2009). The federal government mandated all local education agencies (also called school districts) to create and begin implementing a School Wellness Policy (SWP) by the fall of 2006. Each SWP was required to (Pub. L. No. 108-265, 118 Stat. 729):

1. Include goals for nutrition education, physical activity, and other school-based activities that are designed to promote student wellness in a manner that the local educational agency determines is appropriate,
2. Include nutrition guidelines selected by the local educational agency for all foods available on each school campus under the local educational agency during the school day with the objectives of promoting student health and reducing childhood obesity;
3. Provide an assurance that guidelines for reimbursable school meals shall not be less restrictive than regulations and guidance issued by the Secretary of Agriculture

4. Establish a plan for measuring implementation of the local wellness policy, including designation of 1 or more persons within the local educational agency or at each school, as appropriate, charged with operational responsibility for ensuring that the school meets the local wellness policy; and
5. Involve parents, students, representatives of the school food authority, the school board, school administrators, and the public in the development of the school wellness policy.

By implementing School Wellness Policies across the country, policymakers hoped to combat the epidemic of child obesity and overweight by engaging schools, parents, and communities at the local level (see Chapter II).

This study sought to address three limitations of the current literature on SWP:

1) lack of qualitative methodology, 2) under-emphasis on local implementation efforts, and 3) absence of a clear theoretical framework. The research on School Wellness Policies encompasses a wide range of topics ranging from policy content and compliance with the federal mandate to policy implementation barriers and policy evaluation studies (McDonnell & Probart, 2008). To understand the perspectives of school district personnel, researchers have employed mixed method approaches (qualitative methods in conjunction with quantitative strategies) (Agron, Berends, Ellis, & Gonzalez, 2010; Molaison, Carr, & Federico, 2008; Longley & Sneed, 2009; Belansky et al., 2010; McDonnell, Probart, & Weirich, 2006). However, very few studies have used a pure qualitative methodology to fully capture the experiences of district employees involved in implementing the SWP (see Chapter III). Similarly, current research has used cross-sectional studies to analyze SWP implementation at the state and national levels but leaves a gap in explaining local level factors. The literature is also limited in its application of theory to clarify the policy implementation process.

Everett Rogers' *Diffusion of Innovations Theory* (the organizational model) provides a clear and comprehensive explanation of the actions involved in utilizing a new idea (the School Wellness Policy).

Theoretical Framework

Diffusion is “the process in which an innovation (new idea) is communicated through certain channels over time among the members of a social system” (Rogers, 1962). More specifically, policy diffusion is the process in which a policy is proposed as a solution to an identified need, adopted by lawmakers (made into a law), and then implemented (put to use) to meet the identified need. In reaction to the growing child obesity epidemic, lawmakers adopted the School Wellness Policy with the intent of modifying the school environment through local implementation efforts (see Chapter II).

Implementation is the second of two phases outlined by Everett Rogers' *Diffusion of Innovations Theory* (organizational model) (see Figure 1.1). The first phase, Initiation, which describes the innovation development process, was beyond the scope of this study since researchers defined the innovation as the SWP. The second phase, Implementation, consists of three stages: 1) re-defining, 2) clarifying, and 3) routinizing. Collectively, the three stages describing the events, actions, and decisions involved in putting the School Wellness Policy to use served as the theoretical framework for this study.

The first stage, *re-defining/re-structuring*, occurs when either the innovation or the organization (or both) changes to accommodate a better fit between the two (Meyer & Goes, 1988). According to Rogers (2003), “Redefining/restructuring occurs when the

innovation is re-invented so as to accommodate the organization's needs and structure more closely, and when the organization's structure is modified to fit with the innovation" (p. 424). In the case of the SWP, school districts may have created new jobs or re-defined existing job descriptions to better facilitate SWP implementation. School district administrators were also given the opportunity to alter the innovation itself by tailoring the SWP to meet their specific needs and existing organizational structure.

Clarifying, the second stage, is the meaning making process that occurs among organization members as an innovation is utilized (Rogers, 2003). In the clarifying stage, members socially construct meaning and common understanding around a new innovation (Meyer & Goes, 1988). By communicating and interacting with colleagues, administrators, teachers and staff in each school were more likely to understand the policy's purpose in addressing child obesity. The clarifying stage describes the processes that occurred after the policy was developed but before changes were made in the school environment.

Routinizing, the third implementation stage, describes the process in which an innovation completely assimilates into an organization's regular activities (Rogers, 2003). According to Diffusion of Innovations, SWPs are routinized when policy requirements are well known throughout the district and ultimately result in changes to the school environment. In this study, routinization (sometimes called institutionalization) occurs when compliance with the SWP became standard procedure district-wide.

Methods

Participants

Elementary school personnel were recruited from a school district in Texas. The thirty-one participants, representing five elementary schools in the district, included: fourth grade teachers (n = 15), P.E. teachers (n = 4), cafeteria managers (n = 3), school counselors (n = 3), school principals (n = 2), school nurses (n = 2), an assistant principal (n = 1), and a life skills coach (n = 1).

Recruitment

Participants were initially contacted by email. The researcher used the email addresses of school district personnel posted on each elementary school's website to contact participants. Snowball sampling methods were also utilized as the researcher asked participants to recommend fellow employees who might be interested in participating in the study. Participants were compensated for their time with a \$50 gift card to a local retailer.

Interview Protocol

The interview protocol as a whole was designed to elicit feedback from elementary school personnel on the current state of obesity and overweight among elementary school children. Included in the protocol was a subset of questions specifically related to School Wellness Policies as a potential solution to combatting the child obesity epidemic. This study focused specifically on personnel responses related to SWP implementation in their school district.

Interviews

Individual interviews were conducted in the spring of 2009 between trained interviewers and district employees at a location chosen by the employee: either at the elementary school or the interviewer's research lab. Interviewers selected private locations to foster a sense of security and to protect the participants' anonymity. Interviewers followed a semi-structured interview format. While a set of pre-determined questions served as a general guide, interviewers deviated from the guide and probed more thoroughly as needed by engaging participants in open-ended discussions. Each interview was audio recorded, transcribed by a trained researcher and then double checked by a second researcher.

Other Data Sources

The researcher accessed the school district's website to locate information and documents relevant to SWP implementation such as: the School Wellness Policy itself, the School Wellness Policy Assessment Tool, School Board Meeting agendas and minutes, and School Health Advisory Council (SHAC) meeting agendas and minutes. Document dates ranged from the fall of 2004 to the spring of 2011. Data collected from district documents was used as factual evidence to describe the district's method of implementing their SWP. While factual data explained the district's actions in implementing the policy, interviews with elementary school personnel accounted for individuals' experience with the SWP.

Data Analysis

A thematic content analysis of the 31 interview transcripts was performed by coding individual data units (step 1) and categorizing them according to similar themes (driven by the theory) using the constant comparative method (step 2) (Lincoln & Guba, 1985). Once initial categories emerged, the researcher developed inclusion/exclusion criteria to define each category (Boyatzis, 1998). Then, the researcher drew conclusions based on the emergent thematic categories and their relationship to each other (step 3).

Step 1. In reading through the interview transcripts, units of coding were assigned to each independent thought or idea presented in the text. A unit of coding is “the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon” (Boyatzis, 1998, p. 63).

Step 2. The researcher employed Lincoln’s & Guba’s (1985) constant comparative method to sort data units into preliminary groups based on similar characteristics. Thematic groups emerged through a series of iterative steps, allowing the researcher to assign and re-assign coded units to different groups as new data were added to the analysis (Lincoln & Guba, 1985). For example, after the researcher sorted the units of coding for the first five interview transcripts into preliminary groups, units were shuffled into a random order, combined with units from the next five interviews, and sorted into groups again. The sorting process was repeated approximately eight times as new data was included. Thematic groups emerged as more data units were categorized. After all of the data units from the interview transcripts were sorted into preliminary groups (approximately seven groups), groups were combined to develop

thematic categories representing each of the three diffusion stages of interest: 1) *redefining*, 2) *clarifying*, and 3) *routinizing*.

Boyatzis's (1998) theory-driven code method was used to develop inclusion/exclusion criteria to group the emergent themes by diffusion stage. The researcher modified the three diffusion stage definitions presented by Rogers (2003) to fit the specific context of SWP implementation (see Chapter III). For example, data units addressing changes made in the school environment as a result of the SWP initially formed a group which later became a subset within the larger *routinizing* category. Groups were assigned to a category based on their fit with the overarching definition of the diffusion stage represented by the category. The code (inclusion criteria) was as follows:

- 1) The ***re-structuring*** category assessed the processes related to the modification of the innovation itself (SWP) and organizational changes made to accommodate the policy.
 - a. Involvement of key stakeholders
- 2) The ***clarifying*** category addressed the meaning making process that occurred among school personnel within the LEA while attempting to implement the SWP.
 - a. Awareness of SWP
 - i. Communication (process of disseminating information from the district to the classroom)
 - ii. Policy itself
 - iii. Measurement
- 3) The ***routinizing*** category focused on policy evaluation of both perceived and real changes in the school environment as a result of the School Wellness Policy.
 - a. Actual impact (changes made in LEA) of SWP on school environment
 - i. Changes made in cafeteria
 - ii. Changes made in P.E.
 - b. Perceived impact of SWP on child health

- c. Keys to policy effectiveness
 - i. Parental involvement

Step 3. According to theory driven code analysis, the researcher drew conclusions concerning how the thematic categories related to one another. The interpretation of the thematic categories provided a commentary of the theoretical framework informing the categorization process (Boyatzis, 1998).

Credibility

The researcher used two techniques outlined by Lincoln and Guba (1985) to ensure credibility of findings and interpretations of the data: triangulation and member checking. While triangulation provided credibility for the facts presented in individual data units and documents, member checking ensured credibility for the researcher's interpretations of the thematic analysis.

To ensure the credibility of factual evidence, the researcher triangulated the data by using multiple data collection methods (interviews, documents, and other information available on the district website) and multiple data sources (interviews with more than one person and interviews with individuals with different job descriptions) (Lincoln & Guba, 1985). Using documents as well as interviews provided an avenue for the researcher to corroborate information presented by each source regarding SWP implementation procedures.

Once the data were placed into thematic categories, the researcher met with two local education agency administrators to discuss the thematic categories. Member checking established meaningfulness of findings and accuracy of interpretation (Lincoln & Guba, 1985).

Results: Factual Framework

Davey Independent School District (D.I.S.D.)¹, located in a rural community in Texas, serves approximately 15,000 students across 25 campuses.

Diffusion Stage 1: Re-defining/ Re-structuring

Policy development. Federal legislators enacted The Child Nutrition and WIC Reauthorization Act (CNWRA) during the summer of 2004 with the directive that all school districts have a School Wellness Policy in place by the beginning of the 2006-2007 school year. Instead of creating a new position, Davey I.S.D. added the responsibility of ensuring SWP compliance to an existing position, Director of Child Nutrition (fulfilling SWP component #4). In response to the new law, D.I.S.D.'s Director of Child Nutrition (Bonnie) introduced the mandate to the School Health Advisory Council (SHAC) in the fall of 2005.

In response to the state's requirement, Davey I.S.D established the School Health Advisory Council (Texas Education Code (28.004)). All school districts were mandated to form a SHAC comprised of individuals from the school district and community (parents, students, teachers, and community members at large). By February of 2006, Bonnie and the Physical Education Director (Jane) developed a template SWP and presented the template to the SHAC (using the SHAC to develop the SWP fulfilled SWP component #5). The SHAC modified the template and voted to send the updated version to the D.I.S.D. school board for final approval. The school board approved the SWP recommended by the SHAC in March of 2006.

¹ A pseudonym was given to protect the anonymity of the school district.

Later that spring, the SHAC committee voted to accept the SWP Assessment Tool developed by Bonnie and Jane². The committee also discussed SWP evaluation procedures and suggested that the school nurse and PE teacher of each respective campus be responsible for completing the SWP Assessment Tool annually. The SHAC committee also agreed to revisit the SWP each fall to make necessary changes. Davey I.S.D. developed both their SWP and evaluation plan the spring before the policy was required to be in place (using the SHAC to develop the evaluation protocol fulfilled SWP component #4).

Simultaneous policy implementation. Around the same time Davey I.S.D. was developing their SWP (fall 2005), two state laws were also being enforced in the district: 1) implementation of the CATCH program and 2) the Texas Public School Nutrition Policy. The district was in the process of implementing the CATCH program (Coordinated Approach to Child Health) as a result of Texas' requirement to follow a coordinated school health approach (Texas Education Code (38.001)), a strategy recommended by the Centers for Disease Control (CDC). Davey I.S.D.'s SHAC believed that "the CATCH program captures many of the requirements that must be included in the policy (SWP), however schools need to be actively using the CATCH program (to meet the SWP mandate)". D.I.S.D. used the CATCH program to fulfill the SWP mandate by including goals for nutrition education and physical activity (SWP policy component #1).

² Pseudonyms were given to protect the anonymity of school personnel.

The Texas Public School Nutrition Policy (TPSNP) was also being implemented at the time and served as D.I.S.D.'s guideline for foods available on school campuses. Davey I.S.D. used the TPSNP to meet the second requirement of the SWP, to include guidelines for all foods available on campus during the school day. Thus, the district combined the School Wellness Policy with the CATCH program and the Texas Public School Nutrition Policy to meet both federal and state requirements.

District acknowledgement. The CDC acknowledged Davey I.S.D. as having an exemplary School Wellness Policy. The district was identified by a panel of experts in nutrition, physical activity and obesity prevention as one of only a handful of districts in the state to be noticed. Thus, Davey I.S.D. not only met the requirements outlined by the original SWP mandate, but was recognized as an example for other school districts to follow.

District administrators planned to use the policy to provide a rationale for making changes in the school environment. Although several state policies contributed to the process of altering the school environment, the SWP mandate served as the impetus for creating a written policy available as a resource for administrators, teachers, district personnel, and parents.

Diffusion Stage 2: Clarifying

In disseminating information from central administration throughout the district, Davey I.S.D. focused on principals and school nurses as the focal employees on each campus and trained the school nurses to complete the SWP Assessment Tool. The SHAC selected school nurses to complete the evaluation because they served as the

point person for health concerns on each campus and were considered dependable to complete the assessment in a timely manner. At a SHAC meeting, one teacher mentioned that her campus nurse met with key people (cafeteria manager, PE teacher and CATCH teacher) to accurately fill out the campus's SWP Assessment Tool. The SHAC discussed that given the breadth of the policy, communication and collaboration among district personnel specializing in the multiple areas affected by the policy was essential for successful implementation and accurate evaluation.

Regarding implementation of the policy itself, Bonnie and Jane trained campus principals at the beginning of each school year regarding SWP compliance and emailed updates as necessary throughout the year. In turn, campus principals were responsible for relaying policy information and updates along to their campus employees (e.g. teachers and nurses). Because cafeteria managers communicated directly with Bonnie, she was responsible for managing overall SWP compliance and for the components of the policy specifically related to food service delivery.

Two years after developing their initial SWP and Assessment Tool, Davey I.S.D.'s SAHC revisited both documents and revised them according to suggestions made by central administrators. The policy had been in place long enough that district administrators noticed room for improvement in both the policy itself and in evaluation procedures. Because Bonnie and Jane felt the initial assessment of the SWP fell short, they developed more detailed instructions for school nurses to supplement the SWP Assessment Tool.

Diffusion Stage 3: Routinizing

The extent of the changes made in Davey I.S.D. was beyond the scope of this study but followed guidelines set by Texas state law. In 2004, the Texas legislature (through the Department of Agriculture) mandated very specific requirements for foods served on school campuses: in the cafeteria, offered in vending machines, and available in school classrooms. The Texas Public School Nutrition Policy (Texas Administrative Code 4.1.26A.1-26A.9) mandated widespread changes in the school food environment between 2006 and 2010. The state of Texas enforced the policy by auditing each school district once every five years and applying severe financial penalties for non-compliance. In 2007, the Texas legislature also passed a PE requirement that all elementary school children engage in 135 minutes of moderate of vigorous exercise each week (Texas Education Code (28.002)), altering the physical activity environment. One indication the SWP had become standard procedure throughout the district was the absence of SWP related discussion in district documents. After altering the policy and evaluation procedures two years after the initial implementation attempt, district administrators seemed satisfied with the result.

Results: Thematic Analysis*Theme # 1: Involvement of Key Stakeholders*

The re-structuring stage included participant responses related to policy development and district infrastructure. The theme specific to the re-structuring stage that emerged from interviews with district employees referred to the involvement of key stakeholders (individuals participating in SWP development) at the district level.

Although using the SHAC to develop the SWP met federal requirements, some participants believed additional stakeholders should have been involved in the policy making and policy updating processes.

School Counselor: I think in order to have everyone use it, they all have to have a say in it. . . Parents, teachers, counselors, the nurse, the PE staff. I think you know in order to have a program that actually is successful you have to have input from everyone so they have a connection to it, otherwise what's the point they're not gonna feel like it's important to them.

Some participants believed that the more people involved in the discussion, the more likely district employees would support the policy.

Teacher: . . I think they should probably get professional nutritionists involved on their committee or you know even educators within the district who are familiar or who have gone to school for that, I think that would be a good idea. . . and then even some parents because I think if it were, if it were a committee and you could say you have a little bit of everybody, you know all the stakeholders in there, and being part of it. I think it, you'd include, have more buy in.

A common perception among school employees was that the decision-making process regarding policy development in general (not just the SWP) was too centralized in district administration. Teachers felt they were seldom given an avenue to contribute to the conversation. One teacher voiced her concern, "Everybody should contribute some way, somehow, it's just a joint effort. . . everybody has different students, every student is different so everybody has different opinions so everybody needs to have a little involvement." Although the participants did not necessarily expect district administrators to include everyone in the development process (because policy issues were outside the scope of their job responsibilities), many participants were willing to

offer feedback as a way of informing D.I.S.D administrators of the SWP's impact on their respective campuses and classrooms.

Theme # 2: Awareness of SWP Procedures

Communication. The clarifying stage described participants' awareness of the SWP as a function of the communication between administrators and school staff. Participants acknowledged teacher in-service trainings and educational sessions concerning guidelines for P.E. requirements and classroom parties. One 4th grade teacher said, "Yes our coach does always have meetings with us and we are very aware of her, she keeps us very educated on dates and the things that she does." Another teacher said, "We had a training just in terms of what types of foods we can and cannot have. I mean that's mandated by the state."

School Wellness Policy. Most of the participants could not specifically articulate the district's School Wellness Policy (teacher responses 1 and 2 below) or specific policy requirements; however, many were aware that a SWP existed and knowledgeable that the SWP addressed the school environment (P.E. and nutrition requirements). Because the district so closely linked the CATCH program to the SWP, many participants believed the program and the SWP were one in the same (responses 5 and 6 below). As a result, participants specifically named the CATCH program as the district's means of addressing child wellness. Below are examples of responses to the question, "Are you aware of the district's School Wellness Policy?".

Teacher: I'm aware that we have one but if you ask me to quote it I would not be able to.

Teacher: Um somewhat, [laugh] yeah not quite, I mean I don't know every single thing, but yeah.

Teacher: The only thing I know is that, and I don't even know if it's part of the wellness policies, they've changed our cafeteria food, and I know we're only allowed to give healthy snacks. So I mean. . . I'm not sure how aware that is, or I'm not sure how in depth it is, so I don't know if I'm real aware or not.

Teacher: I mean, I know the students are required to take a certain amount of P.E. but I don't know how much or anything like that. As far as nutrition, we have a strict set of guidelines that we have to follow and the government gives us certain, you know we're only allowed certain amount of fats, certain amount of sugar and stuff for items and then the nutritionist, I think she makes up the menus and then we have to follow the strict, each school has to follow the same recipes so theoretically all the schools you know provide the same food.

Teacher: Um, yes, we have something called the CATCH program.

Teacher: Umm, I know there's a CATCH program that I've been to, it's kind of a cafeteria and P.E. correlation.

A majority of the participants knew about a district policy addressing child wellness; however, some participants expressed concern that information did not always filter to the classroom. The assistant principal of one elementary school mentioned that teachers are overwhelmed with preparing for the standardized assessment test (TAKS) at the end of the year, leaving little room for incorporating additional health related curriculum.

Assistant Principal: I know that they have the CATCH program, but to tell you the truth it doesn't filter down to the teachers. The teachers have no—I mean they're aware of what's going on but as far as, as the obesity problem and stuff I don't think the teachers are aware of it. It's not really filtering down to what's happening in the classrooms because we're very much TAKS oriented, very much high stakes tests oriented (strategies and the getting them to read and the getting them to do the math).

Almost all of the participants knew Davey I.S.D. created a policy to improve students' health but were not necessarily familiar with the title "School Wellness Policy" and seemed to lump all policy issues into a "government" category.

Policy measurement. Very few participants knew the district evaluated the SWP by having campus nurses complete an assessment form. Participants indicated no knowledge of assessment procedures or mentioned the health screening conducted by the school nurse at the beginning and end of the school year to assess each child's health (the evaluation of the CATCH program).

As a whole, participants were aware of the comprehensive nature of the SWP in addressing nutrition education, physical activity and nutrition guidelines. When asked about specifics, participants were most knowledgeable about the individual components of the SWP impacting them specifically. For example, teachers were most familiar with the guidelines for classroom parties, P.E. teachers knew the amount of time children were required to spend engaging in physical activity every week and cafeteria managers knew the specific nutritional requirements for school meals. Although many of the participants did not know the specific content of the SWP (some did!), they did articulate the changes made as a result of SWP implementation.

At the time of the interviews, the School Wellness Policy had been in place in D.I.S.D. for two and a half years, giving participants time to notice the changes made in the school environment as well as the impact of the changes on children's health.

Theme # 3: Actual Impact on School Environment

With the combination of the SWP mandate issued by the federal government and additional mandates issued by the state of Texas, school personnel were very conscious of the resulting changes made to the school environment.

Teacher: I know that they're required to have so much physical activity and that's why we have PE like three days a week, just to make sure we

get all the activity in, which is good. We do have recess, because they're supposed to have, by law, unrestricted time. I like the changes in the cafeteria because the days that I don't bring my lunch, I do have to buy, I do feel better that I know this stuff is baked. I know it's (bread) whole wheat as opposed to white.

Teacher: Well the cafeteria, they've changed a lot of the foods that they feed the kids. The milk for instance, they offer 1 percent and I think it's low fat. In the cafeterias, they changed a lot, where they used to fry foods they now bake it. . . where they used to fry the French fries and the hash browns and things like that, they bake those things now. They're putting hamburger, when they have hamburgers, instead of the white bread, it's on wheat bread. So the wellness (policy) started within the districts through the food service department, the cafeterias, and then in our PE classes.

The changes most commonly mentioned by participants were an increase in PE time and changes made in the cafeteria to provide healthier meals.

Theme #4: Perceived Impact on Child Health

Some participants associated the changes made in the school environment with a decline in obesity. Since the implementation of the SWP in Davey I.S.D., many of the participants noticed changes in the health of their students. One teacher mentioned the impact she noticed on her campus.

Teacher: You know, I don't know our number this year, but I can tell you I think it was two years ago that it was a significant number (of students who were overweight). I mean it was—and that year we did have very, very overweight students. We had I think 4 or 5 students who were just extremely overweight, but I think that the numbers are decreasing every year. Just because we are making sure that the kids are receiving their required minutes for P.E. on a weekly basis, and just because we are making sure that kids are not standing still outside at recess anymore. They are constantly moving. So I think, I know it is decreasing.

A Davey I.S.D. cafeteria manager discussed the changes she saw in her students.

Cafeteria Manager: There are some bigger kids, but you know, it's not like they're big kids. but I've noticed they're (the students) are not

looking as big as they used to. . . I've seen a lot of kindergartners coming in here and teachers would ask them 'Remember, we studied about this and this.' You know, because I usually have posters in the cafeteria and they seem to be catching on. They seem to be catching on. You start them early and I think that hopefully we'll see a difference.

A majority of participants believed the program was making an impact for their students, especially because policy requirements were strictest for elementary schools.

Theme # 5: Keys to SWP Effectiveness

In discussing policy implementation, participants expressed their opinions about the long term effectiveness of the SWP in addressing child obesity. The most prevalent theme related to policy effectiveness was the notion that parental involvement was essential to making a lasting impact. Bonnie mentioned that if a child eats both breakfast and lunch at school every day of the school year, D.I.S.D. is providing only 33% (at a maximum) of that child's meals for the year. If the SWP was intended to combat child obesity, the participants believed joint cooperation with parents and support in the home environment was the key to successfully improving the health of students.

Teacher: I think there should be more of a limit to what they (kids) bring to school. We have some kids that bring whole bags of chips you know to lunch and we really can't tell them not to do that as far as I know, you know we can say "that's really not the healthiest thing for you to eat" or whatever but um as far as I know we can't say you shouldn't bring that to school, I know that our cafeteria doesn't serve it but ...the kids bring those things to school.

Teacher: We know that we can't serve those (junk food) at parties and in the cafeteria but they're bringing them in their lunch boxes. I mean I've had kids bring four or five little Debbie snack cakes but it's in their lunch box and a huge bag of chips and a coke. . .

One teacher explained her experience in engaging parents of an overweight child in her classroom and the difference it made for her student.

Teacher: I just found out last year or the year before last, we had a student in my class, his parents were concerned about him. He had a health problem with his heart and his parents were concerned and the doctor told him that he needed to lose weight. I found out then that you could go to our website and find out exactly what every meal entails: the calories, and all of that. And so that's even offered to the parents, to say that these are our meals that we feed (the kids) and these are the calories. That little boy lost a substantial amount of weight just from his parents getting that list and his mom went through, picked out the meals that she wanted him to be able to eat and we fed him those meals and he has lost a lot of weight. He really looks good.

Davey I.S.D. attempted to engage parents and increase involvement through parent/child activity nights and other community activities sponsored by the district. However, one teacher believed that "they (the district) need to have more education about the lifestyle changes that need to be made here at school and at home. . ." To facilitate lasting change, many participants commented that the district needed to not only engage but also educate parents. Some participants mentioned that having a predominantly Hispanic student population increased the gap between the home and the school environment as a result of both language and cultural barriers. Similarly, participants also mentioned the importance of school's role in providing a safe play environment. Several participants thought the SWP might be a way to protect recess time for elementary children.

Teacher: It's real easy for um administrators to want to take recess time and make it academic time. But I think the fact that kids don't go home and play out in the yards and the neighborhoods like they use to, and you know that being said, it's not as safe for kids to roam the neighborhood and play with the kids like there used to be, or ride their bikes. . . Whereas if they're outside and they're getting their twenty minutes a day, playing on the playground at recess in addition to the P.E. time, then you've given them a safe environment with someone supervising, to get out and be active.

Ultimately, the district employees who participated in the study noticed the changes made in the school environment and credited the changes with improving child health.

Discussion

Strengths and Limitations

This study presented an in-depth analysis of one school district's experience in implementing their School Wellness Policy. Although the findings are unique to Davey I.S.D. and cannot be generalized to other school districts, insight gained from their experience may prove helpful in informing future inquiry or in providing other school districts with suggestions for implementing their SWP. The findings presented represent the perspectives of elementary school personnel in Davey I.S.D., findings may not necessarily hold true for personnel at middle and high school campuses given different contexts of the school environment and that state policies are not uniform across all age groups.

Interviewing participants with a variety of job descriptions described a broad range of individual experiences with the SWP and addressed an existing gap in the current literature. Using multiple sources of data provided factual consistency in explaining Davey I.S.D.'s process of implementing their SWP.

Results from studying Davey I.S.D.'s experience with the School Wellness Policy mandate highlighted findings in three key areas: 1) the influence of policy at the local level, 2) the ambiguity of the policy clarification process, and 3) policy impact.

Finding One: Influence of Policy at the Local Level

Re-defining. The events and decisions occurring on the district level in Davey I.S.D. shed light on the overwhelming influence of policy on local school districts. D.I.S.D's experience in addressing policies related to the school health environment alone describes the arduous task for district administrators to comply with state and federal mandates.

A strength of the SWP mandate is its comprehensive nature. By piecing together components of other laws, D.I.S.D was able to develop an overall plan to address child health. Although the district was already complying with state laws addressing several of the individual SWP components, the SWP mandate gave the district an avenue to write a thorough, overarching policy. Having the SWP in place provided a basis of common understanding for administrators, teachers, parents, and community members. Instead of referring to each policy individually, participants believed having one policy in place helped district personnel implement each component consistently across the district.

Because the types of decisions made during the re-defining/re-structuring stage are issues typically addressed by district administrators, the re-defining stage affected the campus staff very little. As a whole, personnel working at the campus level did not expect to be involved in the initial discussions addressing policy content and evaluation procedures. However, because changes made as a result of the SWP actually impact the classroom, cafeteria and PE environment, school administrators had an opportunity to gain valuable information by eliciting feedback from teachers and cafeteria managers. Campus personnel might offer helpful suggestions related to conservation of resources

(time and money), improved communication, or other ideas leading to better implementation procedures.

Finding Two: Ambiguity of the Policy Clarification Process

Clarifying. The clarifying process seems to be the most difficult of Rogers' diffusion stages to address. This study, as well as the current research on School Wellness Policies, was limited in its discussion of the process in which school administrators communicate policy implementation procedures to campus level personnel (see Chapter III). The clarifying process is difficult to capture given the subtle and casual nature in which one on one conversations occur between district employees throughout the school year. Because it is the least overt of the diffusion stages, qualitative research may be the best method for future researchers to better understand the process.

Even though district personnel could not recite the SWP verbatim, Davey I.S.D. was successful in providing a basic understanding of the policy that filtered to classroom teachers. Teachers were aware of the policy's influence on the cafeteria, PE time, and food guidelines for the classroom; however, the classroom itself seemed to be the most difficult place to incorporate health education curriculum given the litany of other responsibilities placed on teachers.

Finding Three: Policy Impact

Routinizing. To date only a handful of studies have analyzed the actual impact of the policy. Considering Davey I.S.D.'s experience with implementing mandates simultaneously, evaluating the School Wellness Policy's impact may prove difficult.

Researchers should take caution in making assumptions about the impact of SWPs without accounting for the influence of other policies addressing similar issues.

In Davey I.S.D., changes in the school environment resulted from simultaneous implementation of both state and federal mandates. Traditionally, the state of Texas has been progressive in addressing child health in schools. The Texas School Nutrition Policy seemed to have more influence over district decision-making because failing to abide by the mandate resulted in fines for the district. At the time, failing to implement a SWP did not directly result in any penalties. Because other states may not provide such strict requirements, the SWP may be more influential in determining changes to the school environment than in Texas.

In both district documents and participant interviews, Davey I.S.D. personnel mentioned parental involvement in conjunction with changes to the school environment was essential for long term success in combating the obesity epidemic. Ultimately, school policies can only go so far in influencing child health behavior. But, although federal and state governments cannot mandate parental involvement, schools have an opportunity to educate both students and parents about healthier eating and exercise habits.

Ultimately, the policymakers' goal to maintain local and state control while providing a minimum requirement to address child obesity was successful in Davey I.S.D. (see Chapter II).

D.I.S.D. seemed to provide a textbook example of a district fulfilling all five components outlined by the federal mandate. Although changes in the school

environment cannot be directly linked to the SWP, the policy did result in administrators creating a formal SWP used as the reference point for wellness guidelines in their district.

CHAPTER V

CONCLUSION

Study Overview

This study addressed two theoretical challenges posed in the current health promotion literature: to utilize theoretical frameworks addressing social environmental factors (McLeroy, Bibeau, Steckler and Glanz, 1988) and to include institutionalization as a factor when evaluating health promotion programs (Oldenburg, Sallis, Ffrench and Owen, 1999). Current diffusion research accounts for some of the specific processes that occur as an innovation diffuses through an organization such as organizational innovativeness and organizational decision making (Meyers & Goes, 1988). However, this study is unique because it analyzed the complete diffusion process of the policy organization, beginning with policy decision making by legislators on the federal level and ending with policy implementation efforts by school district personnel on the local level. Ultimately, the Diffusion of Innovations framework enabled the study of SWP diffusion as a whole, a needed shift from current theoretical health promotion paradigms (McLeroy et al., 1988).

Three key findings emerged from the study: 1) a lack of research on the clarifying stage of the policy diffusion process, 2) the limitation of policy alone in addressing child obesity, and 3) an opportunity for health promotion researchers to engage in policy research.

Clarifying Stage

Studying School Wellness Policy implementation at the local level exposed a gap in the current literature related to the clarifying stage of DOI theory. Future research would benefit from an increased understanding of how school district administrators effectively introduce a new policy and communicate expectations to school personnel at the campus level. There is also an opportunity to study how school personnel clarify and communicate policy changes to students, parents and other invested parties.

Limitations of Policy

This study highlights the role of the policy making organization (federal government + local education agencies) in influencing health related behaviors of individuals by altering the school food environment. Although the SWP proved influential in changing the school environment, the question remains whether environmental changes are enough to influence individual decision making processes.

The limitations for policymakers in mandating change were apparent in Chapter II. In analyzing the federal discourse, federal legislators discussed the need for cooperation among all societal sectors. The authority of the federal government to mandate change is limited. Even if a policy is passed, enforcing policy compliance may be an issue.

In reviewing the current literature on School Wellness Policies, Chapter III highlighted the time-delay between enacting a federal policy and seeing actual changes as a result. Although the original SWP was enacted in 2004, local education agencies did not have a School Wellness Policy in place as many as five years after the original

mandate. In the case of SWP, organizational compliance directly related to the provision of called attention to the idea that simply having a policy in place did not equate changes in the school environment or improved health of students.

Chapter IV shed light on some of the real barriers to SWP policy implementation and effectiveness. Although the SWP resulted in significant changes to the school environment, school district personnel still experienced obstacles in addressing the child obesity epidemic, namely parental cooperation and the home environment.

Public attention to the child obesity epidemic has grown significantly in the last decade. However, increased awareness is not necessarily indicative of change or improvement of the problem. In the case of School Wellness Policies (SWP), the federal government attempted to mandate change in the school environment as a way of combatting the child obesity epidemic. Although public policy is an effective means of influencing health behavior on a large scale, nutrition and physical activity choices are made on an individual level. Although public policy can be effectively used to facilitate change, policy alone is incapable of solving problems as vast and complex as the child obesity epidemic. The SWP has resulted in changes made in the school environment; but, legislators were adamant in saying (see Chapter 1) that a societal shift, change across all sectors, was necessary for long term change.

Opportunity for Health Promotion

Lastly, this study highlighted an opportunity for the field of health promotion to engage in policy research and the policy making process. A majority of the research published on School Wellness Policies addresses the nutrition components of the SWP

and thus targets nutrition-based audiences. Because the SWP policy was originally created as a comprehensive solution, health promotion researchers have a chance to study the success of the SWP (in its entirety) as a health intervention. The health promotion perspective is also absent from dialogue in the policy initiation process. Engaging in policy related discussions is one way the field can increase its realm of influence (McLeroy et al., 1988; Syme, 1986).

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APPENDIX A

DIFFUSION OF INNOVATIONS THEORY

Introduction

If theories are the stories used to make sense of the world (Goodson, 2010), then Diffusion of Innovations in organizations is the theory that best tells the story of my dissertation. New ideas frequently serve as an impetus for social change (Rogers, 2003). Diffusion of innovations (DOI) theory provides both a detailed and comprehensive explanation of how new ideas are utilized to challenge the status quo. Given the number of social science disciplines using Diffusion of Innovations theory to study both individual and systemic behavior change, the theory is distinctive in its breadth of applicability.

Historical Background of DOI

How do new ideas root and spread through a population? From product diffusion studies by marketing experts to prevention efforts of health care professionals, the answer to this question has significant implications for many academic disciplines. Everett Rogers, the theory's seminal theorist defines diffusion as, "the process in which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1962). Although Diffusion of Innovations theory originated in the fields of sociology and anthropology in the late 19th and early 20th centuries, the theory's relevance across social science disciplines is evidenced by a considerable flux in diffusion studies in recent years (Rogers, 2003).

Sociology. Gabriel Tarde, a French sociologist, introduced the idea of the S-shaped adoption curve, the explanation for differing rates of innovation adoption by individuals over time (Owen, Ntoko, Zhang, & Dong, 2002; Rogers, 1962). In his numerous research publications on the diffusion process, Tarde proposed several fundamental diffusion concepts still included in modern theoretical explanations.

Rogers (1962) argues the main contribution of sociology was neither the volume of the work nor the sophistication of the research methods but the influence of early sociologists' writings on later students of the diffusion process (p. 28). As a discipline, sociology was primarily concerned with social change resulting from the diffusion process; thus, early sociologists focused on the diffusion of single innovations in specific populations.

Anthropology. At the same time sociologists were beginning to study diffusion, anthropologists began observing the transfer of technological advances from one society to another and the cultural implications of adopting innovations. As a field, anthropology contributed unique data collection methods to the diffusion research paradigm, such as participant observation. Anthropology significantly influenced later generations of diffusion scholars as they introduced essential concepts such as perceived compatibility to explain how cultural variables affect differing adoption rates (Rogers, 2003).

Principal Theorist

Everett Rogers played a central role in the formation of Diffusion of Innovations theory as he was the first scholar to see diffusion as a general process. Born and raised in

rural Iowa, Everett Rogers' interest in the diffusion process began during his graduate work at Iowa State University after joining a research project on innovation adoption rates of rural farmers. At the time, Iowa State served as a center for diffusion research in the wake of the influential hybrid corn seed study conducted by Ryan and Gross in 1943 (Cool, Dierickx & Szulanski, 1997; Ryan & Gross, 1943). While writing the literature review for his doctoral dissertation (on the process of weed spray adoption for farmers in Collins, Iowa,) Rogers encountered numerous diffusion studies from a wide variety of disciplines (Rogers, 1962; Rogers, 2003). Ultimately, Rogers found that regardless of the discipline, many research findings accounted for the same general diffusion principles.

Thus began Rogers' quest to conceptualize a general theory of diffusion that could be systematically applied to any diffusion study. With the publication of his first book in 1962 during his first academic appointment at Ohio State University, *Diffusion of Innovations* presents a summary of diffusion research organized by a general diffusion model (Rogers, 2003). Rogers' own research exemplifies his personal belief in the universal relevance of the DOI approach as he personally applied his framework across many disciplines, cultures, and countries.

Before his death in 2004, Rogers updated *Diffusion of Innovations* for the fourth time, publishing the fifth edition in 2002. In his newest edition, Rogers provides contemporary evidence of the theory's timeless relevance with a critique of the empirical body of diffusion literature and a discussion of the theory's applicability in cross cultural contexts (Rogers, 2003; Rogers & Shoemaker, 1971). If anything, time has only

strengthened the argument for DOI as scholars have built a convincing empirical body of research supporting Rogers' model.

Organizational Model

Researchers began studying innovativeness in organizations more thoroughly in the 1970's, compelling Rogers to introduce an entirely new model specific to organizations. Originally, DOI theory explained the innovation adoption process of an individual unit. When used to study organizations, the theory problematically treated the organization as a single unit of analysis (Owen, Ntoko, Zhang, & Dong, 2002). In other words, the original theory described how a complete organization adopted an innovation instead of looking at the decision making process of individual members (or sectors/departments) within the organization (Cool et al. 1997; Van de Ven & Rogers, 1988). Rogers' new model included entirely new characteristics of innovativeness specific to organizations and divided the innovation process into two distinct phases, initiation and implementation, (see Figure 1.1) (Sharma & Kanekar, 2008; Rogers, 2003).

Zaltman's contribution

Rogers credits *Innovations in Organizations* by Zaltman, Duncan and Holbeck (1973) with transforming the application of diffusion concepts to organizations. Until the late 1970's, research involving innovations in organizations focused primarily on characteristics of innovativeness and adoption rates (Rogers, 2003). Zaltman et al. (1973) encouraged researchers to make implementation (the process of using an innovation) the predominant dependent variable of interest instead of keeping with the

research tradition of studying innovation adoption (the decision to use an innovation). Toward the end of the decade, diffusion researchers studying organizations notably shifted from cross sectional studies of singular diffusion concepts to case studies concerning the diffusion process in a single organization over time (Rogers, 2003).

Core Theoretical Concepts

Social change

According to DOI, social change occurs when either the structure and/or the function of an organization is altered. Social change may occur either before or after an innovation is adopted by an organization; however, in both cases, the goal of the innovation is to minimize the performance gap (see definition below).

Innovation. An innovation is an idea that is perceived as new by the adoption unit. Rogers and Shoemaker (1971) note, “It matters little, as far as human behavior is concerned, whether or not the idea is objectively new as measured by the lapse in time since first use or discovery. . . . If the idea seems new or different to the individual, it is an innovation”(p.19). To reiterate, an innovation is not necessarily a new idea but an idea that is perceived as new by potential adopters or applied in a new manner.

Performance gap. Changes in the organizational environment may create a performance gap, the discrepancy between an organization’s expectations and its actual performance. Said another way, a performance gap is the difference between what an organization could do and what it actually does. Zaltman, Duncan and Holbeck (1973) say,

A performance gap may have significant adverse consequences for the organization if the gap is not narrowed or bridged. The awareness and need, in

effect unfreeze elements within the organization most closely relate to the external environmental change. When this occurs, conditions are present for altering the structure and function of the organization or some subsystem of it. (p. 3)

An organization addresses a performance gap either internally or externally. An internal solution indicates the organization already possesses the solution to narrow the performance gap or has the means and/or resources to develop a solution. When an organization approaches a performance gap with an external solution, the organization borrows or adapts a solution already being used by an organization with a similar problem (Rogers & Shoemaker, 1971).

Modification of an organization's structure or function may either provide the impetus for implementing an innovation or result from an adopted innovation. Zaltman et al. (1973) argue, "The innovation can precede and cause social change, or it may be developed in response to needs created by social change" (p. 4). When change in the organization occurs before an innovation, an innovation is implemented with the intent to decrease the performance gap. Thus, unintentional change in the organization creates a need for an innovation to return the organization to its original condition. When change occurs after innovation adoption, the innovation results in the desired effect of closing the performance gap (Zaltman, 1973); so, the innovation is intentionally implemented to modify the organization.

Levels of change

Zaltman et al. (1973) introduce two levels at which change occurs. Level one includes the general industry to which the organization belongs. A specific industry as a whole is a viable social system in and of itself. Level one for my study includes the

government 'industry': elections, setting the legislative agenda, voting procedures in the bicameral legislature, the influence of a two party system, and the many other processes specific to government proceedings. So, the policymaking industry is characterized by its own subculture of behaviors, norms and values in which the organization is embedded.

The second level of social change considers society as a whole by considering an entire sector. For example, the governmental sector includes all processes in which the government produces goods or services and then delivers them to its citizens on a national, state or local level (Carnevale, 2002). According to Diffusion of Innovations theory, structural or functional modification at either level constitutes social change. (Rogers & Shoemaker, 1971; Zaltman, 1973).

Organizations and Health Promotion

Why are organizations essential to the field of health promotion? If the field of health promotion is shifting away from explanations of health behavior related to intrapersonal factors, the target of health interventions broadens to include interpersonal relationships and even organizational and community characteristics. McLeroy et al. (1988) argue that organizational structures and processes have the potential to significantly influence the health and health related behaviors of individuals and may have positive as well as negative effects on the health of organization members (p. 369).

Organizational influence directly relates to the provision of important economic and social resources and the communication of norms and values as they diffuse within the organizational context. McLeroy et al. (1988) say,

Organizational changes are necessary to support long term behavior changes among individuals, organizational change is an essential component of creating an organizational culture supportive of health issues, and organizational changes are necessary prerequisites for the adoption, implementation and institutionalization of health promotion programs. (p. 362)

Community settings are the most common host for health promotion programs given the availability of resources, namely government funding. “Nowhere is reciprocal causation between programs and organizations more evident than in the adoption, implementation and institutionalization of programs in community settings” (McLeroy et al., 1988, p. 361). In the case of school wellness policies, the federal government selected a community setting, a school, as the host setting for their innovation to combat child obesity. Since community settings greatly influence the outcomes of health promotion programs, institutionalization of successful programs in organizations is essential to sustained behavior change.

Innovation in Organizations

The central assumption unique to Diffusion of Innovations in organizations is the idea that organizational variables influence behavior in a manner greater than the aggregate of individual members within the organization (Rogers, 2003); thus, the influence of the organizational collective is greater than the sum of individual members. In theory, implementing an innovation in an organizational context has a greater influence on member behavior than approaching each member of an organization individually.

According to DOI theory, innovations impact four central aspects of an organization:
1) products and/or services 2) the production process (changes in task systems or

physical production operations), 3) the organizational structure, and 4) people and programs (Knight, 1967). Zaltman et al. (1973) add an additional context, the policy context, in which innovations are, “a sufficient but not necessary condition preceding any other type of change. Policy innovations involve major changes in an organization’s strategies for achieving major objectives” (p. 16). The innovation to implement school wellness policies altered the federal government’s approach to combat child obesity by adding another focal dimension, the school food environment.

Decision Making

The idea of categorizing different types of innovation decision making processes that occur in organizations was first outlined in *Communication of Innovations* by Rogers and Shoemaker in 1971. The concept of authoritative decision making was a key theoretical component contributing to my decision to use the DOI in organizations model.

Unlike the decision making process for individuals, local education agencies are mandated to implement a school wellness policy; thus, the innovation decision is made unilaterally. In studying the diffusion process for a specific local education agency, the process would be incomplete if I failed to account for the fact that the innovation decision was made by federal legislators and not school district personnel themselves.

Authoritative decision making is defined by Rogers and Shoemaker (1971) as,

... decisions forced upon an individual by someone in super-ordinate power position. The individual (or any other type of adoption unit) is ordered by someone in a position of higher authority to adopt or reject an innovation. The individual is not free to exercise his [sic] choice in the decision making process. (p. 301)

The choice to adopt or reject an innovation is made by relatively few individuals who possess power, in a system. Other types of decision making processes in Rogers' model include optional, collective and contingent decisions, all of which give individual organization members a choice in deciding which innovation to use or when/if to adopt the selected innovation.

In Rogers' model, authority innovation decisions involve two kinds of units. Whereas the "adoption unit" is the individual or group implementing the innovation (in my case local education agencies), the "decision unit" is the individual or group in a position of higher authority making the decision to adopt or reject an innovation (Rogers & Shoemaker, 1971). Authority decisions emphasize the noticeable divide between units, which may be exacerbated in some organizational environments like the policymaking system. In the case of public policy, legislators frequently make decisions to adopt new programs but are rarely, if ever, responsible for implementation or for program results. Because of the hierarchical relationship between the units, the adoption unit conforms to the preferences of the decision unit, frequently creating conflict between the two.

Characteristics of formal organizations

For the purposes of my dissertation, the formal organization being analyzed is the policy organization; including policymakers who initiate the policy innovation (the decision unit) and the school administrators and personnel who are included in implementing the policy innovation (the adoption unit). Although each unit could be considered an organization by itself, the system as a whole serves as the unit of analysis.

Formal organizations are distinguished by the fact that they are established to meet specific goals. Rogers and Shoemaker (1971) define an organization as,

A formal organization is a social system that has been deliberately established for achieving certain predetermined goals; it is characterized by prescribed roles, an authority structure, and a formally established system of rules and regulations to govern the behavior of its members. (304)

The five characteristics unique to formal organizations are: 1) predetermined goals, 2) prescribed roles, 3) authority structure, 4) rules and regulations, and 5) informal patterns. Predetermined goals are the specific reason for which an organization exists. The U.S. Constitution provides six very explicit goals for the government. The fifth goal, “promoting the general welfare (of the people)” provides the rationale for creating policies and implementing programs intended to positively impact the health of the nation.

Prescribed roles include the various tasks distributed among organizational positions. In my example, prescribed roles are readily apparent in both the decision adoption units. Legislators serve on various committees within their respective chambers to carry out specific functions. School districts assign explicit tasks to personnel positions to ensure effective and efficient delivery of educational services. In my study, the prescribed role for school districts includes creating, implementing, and evaluating a school wellness policy. Prescribed roles are tasks that are specific to a job, not necessarily specific to a person.

Authority structures are noticeable in formal organizations, as all positions do not share authority equally. Even the U.S. government operates under an entrenched seniority system in which seasoned legislators have more authority than their freshman counterparts. Specific to my dissertation, school district personnel have little influence in the decision to adopt the school wellness policy and must abide by the mandate to remain in good standing with both the federal and state governments.

Also noticeable, are the rules and regulations governing organizational decision making. From the election process to voting on legislation, formalized rules and regulations clearly exist to ensure and sustain consistent operation (Zaltman, et al., 1973).

Lastly, informal patterns characterize the norms, values and actions within an organization. The political climate unique to government positions is a prime example of how informal patterns shape an organization. The political party with a majority frequently determines which legislation is approved.

Stages of the Organizational Model

According to Rogers' model, the innovation process occurs in five distinct stages. Rogers (2003) says, "The innovation process in organizations identifies the main sequence of decisions, actions, and events in this process. Data about the innovation process are obtained from the recallable perceptions of key actors in the innovation process, written records of the organization about the adoption decision and other data sources" (p.417). The stages occur in a specific sequence as later stages only occur after earlier stages have been completed.

Initiation Phase

The initiation phase involves information gathering, conceptualization, and planning for the adoption of an innovation by organization leaders (Rogers, 2003; Zaltman, 1973). Two stages in the initiation phase, agenda setting and matching, describe the context in which organization leaders make the decision to adopt an innovation (Owen et al., 2002; Rogers, 2003). For my study, the initiation phase includes the rationale and political processes compelling policymakers to include the new school wellness policy provision in the reauthorization of the original law.

Agenda Setting. Agenda setting is the process by which organization leaders identify and prioritize problems. Zaltman argues that problem identification inherently creates a perceived need for an innovation to address the performance gap. Steps in the agenda setting stage include identifying and recognizing needs and exploring the organization's environment to find helpful innovative concepts that already exist within the organization (Rogers, 2003). Organizations usually prefer internal solutions because they are easier to implement.

Given the complexity of many organizational systems, the agenda setting process frequently occurs over an extended period of time. In the case of public policy, setting the federal legislative agenda takes months to prepare, if not years, given the intricacies inherent in the U.S. political system.

An organization's agenda is also very influential in determining an organization's future. Walker (1977) says, "Those who manage to shape the legislative agenda are able to magnify their influence many times over by determining the focus of

attention and energy in the entire political process” (p. 424). In the case of the Child Nutrition and WIC Reauthorization Act of 2004, policymakers identified child obesity and overweight as an issue serious enough for placement on the 2004 legislative agenda for both the Senate and House of Representatives. Bills relating to the school food environment were introduced in both chambers. Setting the agenda initiates the entire innovation process as the ideas and actions occurring in the first stage provide continual motivation to complete the process (Rogers, 2003).

Matching. The second stage in the initiation phase, matching, occurs when organizational leaders place the identified problem on the agenda and subsequently match the problem with a solution, namely an innovation. During the matching phase, organization leaders attempt to evaluate an innovation’s feasibility in light of available resources (Cool et al., 1997; Rogers, 2003). Matching involves significant planning as organizational leaders attempt to identify potential benefits and possible barriers that may occur during implementation. Zaltman et al. (1973) notes that a good match is essential for innovation sustainability. At the matching stage, organization leaders may decide an innovation and problem are mismatched and terminate the innovation process before implementation occurs (Rogers, 2003). Thus, the matching phase is vital to the innovation process because it provides the link between the two main phases, initiation and implementation. In 2004, legislators matched the problem of child obesity with the enactment of a new policy requiring local education agencies to design and implement a school wellness policy.

Implementation Phase.

Implementation, the second phase of the diffusion process happening after the innovation decision (in this case an authoritative innovation decision), includes three distinct stages. Rogers (2003) says that the implementation phase consists of events, actions, and decisions involved in using an innovation (p. 420). Unlike the original paradigm that focuses on innovation and adoption characteristics, greater emphasis is placed on implementation when using the organizational approach (Sharma & Kanekar, 2008; Zaltman et al., 1973).

Restructuring. The first stage, restructuring, takes place when either the innovation or the organization changes to accommodate a better fit between the two (Meyer & Goes, 1988). Both the innovation and the organization usually change in the innovation process. Rogers says, “Redefining/restructuring occurs when the innovation is re-invented so as to accommodate the organization’s needs and structure more closely, and when the organization’s structure is modified to fit with the innovation” (p. 424). The restructuring stage frequently facilitates social change as the structure and/or function of the organization adapt as a result of the innovation. For example, local education agencies may reorganize internally by creating new positions or re-defining job descriptions and responsibilities to facilitate successful implementation of the school wellness policy. Importantly, the federal mandate includes general guidelines that can be tailored for each local education agency, allowing school administrators to reshape the innovation to accommodate their specific needs and structure.

Clarifying. Clarifying, the second implementation stage, occurs when an innovation is extensively utilized until the meaning of the innovation becomes clear to an organization's members (Rogers, 2003). By implementing a district-wide school wellness policy, administrators, teachers and staff in each school are more likely to understand the policy's purpose for addressing child overweight and obesity: to modify the school nutrition and physical activity environment. Zaltman (1973) notes that an innovation may be implemented too quickly, resulting in short-lived changes. To prevent the negative consequences from the innovation being implemented too quickly, the federal mandate allowed a year and a half between announcing the innovation and expecting school districts to begin implementing the policy. In the clarifying stage, members socially construct meaning and common understanding around a new innovation (Meyer & Goes, 1988). In communicating and interacting with colleagues in the same school or other schools in the district, an administrator or teacher determines what the policy actually means. Over time, the innovation gradually embeds in the organization's structure.

Routinizing. Routinizing, the final stage in the implementation phase, is complete when adopters no longer consider an innovation new because it has been completely assimilated into an organization's regular activities (Rogers, 2003). Routinization, also called institutionalization, occurs in school districts when compliance with the school wellness policy becomes routine. Rogers (2003) notes that participation is an important factor in determining the degree to which an innovation is successfully implemented and sustained. He argues, "If many organization member's participate in designing,

discussing, and implementing an innovation, its sustainability over time is more likely” (p. 429). Innovations determined by the authoritative decision making process are at greater risk for weakening over time because organization members responsible for implementation are not involved in initial discussions (Rogers, 2003). Oldenberg et al. (1999) identify institutionalization studies as a weakness in the current literature and suggest it may be the most important stage in determining the effectiveness and sustainability of health promotion interventions. Ultimately, the Diffusion of Innovations framework enables health promotion researchers to study the implications of our interventions and profession as a whole, a needed shift from our current theoretical paradigms.

APPENDIX B

SYSTEMATIC LITERATURE REVIEW MATRICES

Article References

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10	Seo, D. (2009). Comparison of school food policies and food preparation practices before and after the local wellness policy among Indiana high schools. <i>American Journal of Health Education</i> , 40(3), 165-173.
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Research Design

Article ID	Design	Code
1	Qualitative	1
2	quantitative	2
3	quantitative	2
4	quantitative	2
5	quantitative	2
6	mixed	3
7	mixed	3
8	mixed	3
9	mixed	3
10	quantitative	2
11	quantitative	2
12	quantitative	2
13	mixed	3
14	quantitative	2
15	quantitative and qualitative	3
16	quantitative	2
17	quantitative	2
18	quantitative	2
19	quantitative	2
20	quantitative	2
21	quantitative	2

code	method	%
1	qualitative	1 (4.76%)
2	quantitative	14 (66.66%)
3	mixed method	6 (28.57%)

Journals

article #	journal (audience)	Code
1	Journal of Child Nutrition and Management	1
2	Journal of Nutrition Education and Behavior	3
3	Journal of School Health	2
4	Journal of the American Dietetic Association	4
5	Journal of School Health	2
6	Journal of Child Nutrition and Management	1
7	Journal of public health policy	5
8	Journal of the American Dietetic Association	4
9	Journal of Child Nutrition and Management	1
10	American Journal of Health Education	8
11	Journal of the American Dietetic Association	4
12	Journal of School Health	2
13	Journal of School Health	2
14	Journal of Nutrition Education and Behavior	3
15	Journal of the American Dietetic Association	4
16	Journal of Child Nutrition and Management	1
17	Journal of Child Nutrition and Management	1
18	journal of foodservice business research	7
19	Health Affairs	6
20	Journal of Nutrition Education and Behavior	3
21	Journal of School Health	2

code	journal	total #	%	Health Education Journal?
1	Journal of Child Nutrition and Management	5	23.81	
2	Journal of School Health	5	23.81	HE
3	Journal of Nutrition Education and Behavior	3	14.29	HE
4	Journal of American Dietetic Association	4	19.05	
5	Journal of Public Health Policy	1	4.76	
6	Health Affairs	1	4.76	
7	Journal of Foodservice Business Research	1	4.76	
8	American Journal of Health Education	1	4.76	HE
		21		42.86%

Authors

duplicate authors		
ID #	1st author	2nd author
1	probart	McDonnell
2	Serrano	Kowaleska
3	metos	Nanney
4	probart	mcdonnell
5	moag-stahlberg	howley
6	molaison	carr
7	belansky	cutforth
8	longley	sneed
9	longley	sneed
10	seo	
11	Schwartz	McDonnell (4)& Probart (5)
12	snelling	kennard
13	agron	berends
14	lambert	monroe
15	belansky	cutforth
16	namasivayan	conklin, lambert
17	mcdonnell	probart
18	conklin	lambert
19	Probart	McDonnell
20	jomaa	McDonnell (2) & Probart (6)
21	chriqui	chaloupka
	Mcdonnell & Probart (PSU)	6
	belansky	2
	longley & sneed	2
	conklin & lambert	2
		12

Theoretical Framework

ID #	theory
1	none
2	none
3	none
4	none
5	none
6	none
7	none
8	none
9	none
10	none
11	none
12	none
13	none
14	organizational change theory
15	none
16	none
17	none
18	organizational support theory
19	none
20	none
21	none

2 (9.25%) = explicitly mentioned a theoretical framework

Purpose of the CNWRA

ID #	Obesity 15 (71.43%)	School Env. 13 (61.90%)	Prevention/ Promotion 3 (14.28%)	Address Health Eating & Physical Activity both =10 (47.62), HE only = 5 (23.81)	Multiple categories 14 (66.66%)	Implicit 3 (14.29%)
1	X	X		X	X	
2						X
3		X		X	X	
4	X					
5	X	X		X	X	
6	X	X	X	X	X	
7	X			X	X	
8	X	X		X	X	
9	X	X		X(not PA)		
10	X	X	X	X(not PA)	X	
11						X
12	X	X		X(not PA)	X	
13	X	X	X	X	X	
14		X		X(not PA)	X	
15		X		X	X	
16	X	X		X(not PA)	X	
17	X					
18	X			X	X	
19	X					
20	X	X		X	X	
21						X

Focal Policy Components

ID #	cited original policy 28.57 (n=6)	number of policy components included in intro?	focal policy component/s addressed				
			1. nutrition education & physical activity 57.14 % (n=12)	2. nutrition guidelines 52.38% (n=11)	3. USDA guidelines 19.04% (n=4)	4. implem. 66.66% (n=14)	5. stakeholder involvement 47.61% (n=10)
1	X	5				X	
2	X	5	X	X		X	X
3	X	5	X	X	X	X	X
4		5	X	X	X	X	X
5	X	5	X	X	X	X	X
6	X	5				X	
7	X	5	X			X	
8		2	X	X		X	X
9		0	X	X			
10		2		X			
11		5	X	X	X	X	X
12	X	2		X			
13	X	4	X	X		X	X
14	X	1	X			X	
15	X	1		X			
16	X	0				X	
17	X	5	X				X
18	X	5				X	
19		2				X	
20	X	1					X
21	X	5	X				X

5 = 11
(52.38%)

4 = 1
(4.76%)

2 = 4
(19.04%)

1 = 3
(14.29%)

0 = 2
(9.52%)

mean # =
3.33

Participants

FSD	6	28.57%
teachers	1	4.76%
student	1	4.76%
multiple	5	23.81%
policy	6	28.57%
super-i	1	4.76%
prin	1	4.76%
	21	

Sample (Unit of Analysis)

ID	Code		
2	S		
3	S		
4	S		
5	S		
11	N		
18	N		
20	S		
21	N		
16	N		
6	S		
9	N		
12	C		
10	N		
19	S		
7	S		
8	S		
13	S		
14	S		
15	S		
17	S		
1	N		
	#	%	
state	13	61.90	
national	7	33.33	
county	1	4.76	

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