AN ANALYSIS OF THE IMPACT OF THE PUBLIC SCHOOL DISTRICT FOOD SERVICE DIRECTOR ON THE DEVELOPMENT AND IMPLEMENTATION OF FOOD-RELATED POLICIES AND PRACTICES

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Since former Surgeon General David Satcher first identified childhood obesity as a threat to the nation’s health in 2001, health professionals have investigated potential solutions. Venues in which to address this problem have also been explored.

The school setting was identified by the Institute of Medicine as a viable location in which to address the increasing child obesity epidemic. School professionals and personnel who are in contact with children for a large percentage of daily time were identified as potential change-agents. In addition, the School Wellness Policy Mandate of 2004 identified key players in the task of promoting wellness within the school setting. School personnel, namely school foodservice managers, were identified as primary players in the fight against this mounting health problem.

Interestingly, there is great variability in the professional preparation of school food service district managers/directors. Many professional organizations at this same time have been calling for professional preparation standards for the school food professional due to their important position and potential ability to influence the health of children.

The purpose of this study was to analyze the impact of demographic characteristics and perceived self-efficacy on the development and implementation of
food-related policies and practices in schools among district public school food service directors in the state of Ohio ($N = 601$). Results indicate that certification of the district school food service director is associated most often with comprehensive policy and practice. Consistent with the literature, lack of funds was identified as the most common barrier to implementing comprehensive food policy and practice. It was also discovered that regardless of professional preparation, all subjects felt equally capable in their role. Higher levels of self-efficacy, however, were not associated with higher reporting of either food-related policy or practice.

Recommendations are to explore the nature of self-efficacy and professional performance in this population and to promote certification as a way to enhance comprehensive school health practices.
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CHAPTER I
INTRODUCTION

In January 2000, the United States Department of Health and Human Services released its goals and priority focus areas regarding the health of the American people in a document entitled Healthy People 2010. This document outlined the framework to improve our nation’s health by 2010 (Healthy People 2010: About, n.d.-a). Of the many specific and measurable health promotion objectives set forth in the Healthy People 2010 report, 10 were given priority status as Leading Health Indicators (LHI). Due to their intimate connection to disease risk, obesity and overweight (LHI #4) have been identified among this list of priorities. In recent years, the incidence of both obesity and overweight in both adults and children has increased significantly. For example, children, ages 6 to 19, have been estimated to have an obesity prevalence rate of 16% (Healthy People 2010: Nutrition and Overweight, n.d.-b). This figure is well above the recommended 5% goal identified by the Surgeon General of the United States (Healthy People 2010: Nutrition and Overweight, n.d.-b). Examination of 1979 to 1999 discharge data for hospitalized youth, aged 6 to 17, reveals that hospitalization rates doubled due to diabetes mellitus, tripled due to obesity and disease of the gallbladder, and quintupled due to sleep apnea (Wang & Dietz, 2003). Each of these medical issues has been associated with increases in obesity levels in both adults and children (Dietz, 1998). Medical complications related to obesity have contributed to the mounting concern about what many have termed an “obesity crisis” or “epidemic.” In 2002, former United States Surgeon General David Satcher asserted that obesity indeed had reached “epidemic proportions” when he issued
a “Call to Action” in his *Surgeon General’s Report* (United States Department of Health and Human Services [USDHHS], Office of the Surgeon General, 2001). *The New England Journal of Medicine* confirmed the serious nature of this epidemic by predicting that the current generation of children may have a shorter lifespan than that of their parents (Olshansky et al., 2005).

In a landmark report entitled: *Childhood Obesity: Health in the Balance*, the Institute of Medicine (IOM, 2005) reported that schools were a major venue for interventions in resolving the current childhood obesity epidemic. Because children spend so much time in this arena, it is regarded as the ideal place in which to address this complex issue. Moreover, any effort aimed at increasing student health also has been demonstrated to exert a positive influence over parent and teacher health behaviors. Although, the Centers for Disease Control and Prevention recently reported that for the first time, the trend stabilized in 2005-2006 (Ogden, Carroll, McDowell, & Flegal, 2007). Unfortunately research has confirmed that there has been little success in slowing current obesity trends. Nevertheless, “the school environment has the potential to affect national obesity prevention efforts both because of the population reach and the amount of time that students spend at school each day” (IOM, 2005, p. 279).

In this regard, schools have been called upon to provide policy guidance for the promotion of healthy eating habits of children. In 2000, the American Dietetic Association published a position paper entitled *Local Support for Nutrition Integrity in Schools*. In this document, integration of school nutrition with education was proposed and encouragement was given for collaborative development of policy addressing these
items along with that of an environment that is supportive of the development of healthy eating habits for a lifetime. Further, the document reiterated the need for “supportive local policy” in order to successfully implement programs and other health-focused initiatives (p. 109).

Due in part to the obesity crisis, all schools that participated in the Federal School Lunch or Breakfast Programs were required by federal law to implement a School Wellness Policy by the start of the 2006 school year (U.S. Department of Agriculture, n.d.-a). A result of the Child Nutrition and WIC Reauthorization Act, this policy implementation was specified to have been comprehensive in nature, and involve not only school officials, but also students, parents, and the community (U.S. Department of Agriculture, 2005). In the following year, a document was published by the Action For Healthy Kids Coalition (AFHK) calling for systemic change in schools. It advised that attention from multiple sectors be directed at children and recommended that students, parents, and communities be engaged in health promoting and obesity preventing measures (AFHK, 2006a). Action for Healthy Kids is a national, non-profit organization committed to addressing the health issues of overweight and inactivity in children (AFHK, n.d.). While schools have taken steps to comply with the School Wellness Policy Mandate, they have been engaged simultaneously in a sweeping educational reform initiative.

Additionally, with the passage of the No Child Left Behind Act in 2002, there have been increased and directed efforts to assist children with their academic performance via enhanced curriculum, testing and other aids (United States Department
of Education: Fact Sheet, n.d.). This focused and intensive attention to improving outcomes in academic subjects has resulted in less time in both health related physical activity and health education (Constante, 2002; Deutsch, 2000).

Unfortunately, this reduced focus on a range of school-based health promotion activities has, in fact, been a major detriment to the student’s academic success. In its 2004 report entitled The Learning Connection, Action For Healthy Kids (2004, p. 21) has suggested that schools are “undermining” their efforts to increase academic achievement by reducing time and effort spent on health related activities and training. In this context, Hanson, Austin, and Lee-Bayha (2004) concluded that reduced focus on comprehensive health programming negatively affected the academic performance of children. In response to the many publications highlighting the beneficial nature of health programs, The National Association of State Boards of Education (NASBE, 2000) issued a statement underscoring the intertwined relationship between health and achievement. Their policy guide, written with consultation from the Centers for Disease Control and Prevention, is designed to serve as a tool that can assist any school in planning policies that represent best practice (NASBE, 2000). An example of how a school health policy can support the learning environment has been linked to school breakfast programs. When conducting a meta-analysis regarding the effects of nutrition-related interventions in schools, Howard Taras (2005) concluded that school breakfast, in comparison to other initiatives, is particularly helpful in improving the academic performance of undernourished children and that children who are lacking in iron can perform better if
this mineral is supplied in adequate amounts. School meal programs (breakfast and lunch) can address both issues.

One framework for implementing the School Wellness Policy Mandate while maintaining a focus on education outcomes is the Coordinated School Health Program (CSHP). In this model, the school is reinforced as an important center to activities that can bring about change (National Center for Chronic Disease Prevention and Health Promotion, 2007). The components of this model include health education, physical education, health services, nutrition services, counseling/psychological/social services, healthy school environment, and health promotion for staff and family/community involvement. This multidisciplinary model incorporates multiple levels of intervention and can be used to provide a base for policy development and health programming (Allensworth & Kolbe, 1987). CSHP closely parallels the Social Ecological Model in that it promotes problem-solving via multiple levels of influence from personal factors through policy influences (McElroy, Bineau, Steckler, & Glanz, 1988). In the CSHP, eight components interact in a supportive nature to create a climate that is conducive to good health for students. These eight components can function independently, but also interact and enhance the effects of one another. Since many health issues are considered to be problems whose cause is multifaceted in nature, many components of school programming must come together in order to solve them. Gross and Cinelli (2004) underscored the need for application of this type of model to the school setting in order to solve the obesity crisis. The authors asserted that this model moves beyond education in the classroom and embraces support of healthy eating by the entire school and
community; a social ecological approach. Further, these authors suggested that nutrition messages in schools tend to be inconsistent and that policies need to be adopted by schools to ensure that all foods and beverages available on a school campus and at school events be consistent with the Dietary Guidelines for Americans (DGA; Gross & Cinelli, 2004).

As demonstrated by the Coordinated School Health Program, Green, Richard, and Potvin (1996) reiterated that individuals and their interaction with their environments are complex and therefore require multifaceted interventions to yield success. The Coordinated School Health Program addresses each particular area in the school that serves to interact with and influence the child. This interactive and complex relationship should inform and guide policy development. As such, when attempting to address the health of children and to prevent obesity, the whole school environment as well as other areas of influence should be considered (Green et al., 1996).

Currently, the Centers for Disease Control and Prevention (CDC) Office of Strategy and Innovation is promoting goals to protect the health of Americans (Centers for Disease Control and Prevention, 2009a). These goals are defined with criteria and objectives that fall under the category of Health Impact Focus, one of six priorities identified by the organization. Objectives identified under this category directly parallel and promote the framework of the Coordinated School Health Program (CSHP) via the Healthy People in Healthy Places subcategory. They include promotion of a healthy environment within the school and improving the health and safety through coordinated
and comprehensive policies and instruction (Centers for Disease Control and Prevention, 2009a)

In order to carry out the mission of the Centers for Disease Control and Prevention’s Office of Strategy and Innovation, schools can conduct a self-evaluation of their efforts to implement the CSHP by using the School Health Index (SHI). The School Health Index contains a variety of questions that cover all areas of health (including nutrition) and requires that the individual completing the tool to identify whether or not policies are either (a) not in place, (b) partially in place, or (c) fully in place. A numerical score is provided for each answer and then the score is totaled and matched to an index that identifies how well the school is performing in each area (National Center for Chronic Disease Prevention and Health Promotion, 2006b). In the current version of the tool, there are 23 items that pertain to school nutrition policies and/or practices. The SHI can serve to inform school officials in the planning and evaluation of programs to improve both health and academic outcomes.

For overall success, programs should focus on education, skill development, and policy. Concurrent interventions at multiple levels are necessary for the promotion of healthy behaviors and that this is the responsibility of program planners and policy makers (Pellmar, Brandt, & Baird, 2002). Unfortunately, many schools do not have comprehensive policies that positively affect children’s health. Moreover, schools that do have such policies do not effectively enforce or monitor them. A 2002 study of Minnesota school principals revealed that although a majority of principals (65%) felt that nutrition policies were important, the practices supported by these policies did not
correlate. Ninety-eight percent of the schools surveyed had vending machines containing soft drinks and 77% of schools surveyed had contracts with soft drink companies (French, Story, & Fulkerson, 2002).

In order to emphasize the importance of sending a consistent message to children and to promote the need for the delivery of comprehensive nutrition services, many organizations have joined together to provide guidance in this area. In a joint position paper issued by the American Dietetic Association, the Society for Nutrition Education and the American School Food Service Association called on schools to provide comprehensive nutrition services for all children from preschool through grade 12 and to possess policies that link comprehensive nutrition education with access to healthy foods, connections with the community, and an overall environment that supports healthy eating habits (American Dietetic Association, 2003). Similarly, the National Association of State Boards of Education outlined its recommendations regarding food policies for the school. Sample policies listed below are consistent with those offered in the prior-mentioned position paper. They include:

- A well-prepared staff
- Nutritious food that is served
- A pleasant environment for eating with adequate time to eat
- Sequential nutrition instruction involving coordination with school food service
- An environment in the school which encourages healthy food choices (many policies can stem from this recommendation)
• Opportunities and encouragement for staff modeling
• Services for referral for nutrition-related eating problems
• Involvements of family members in program development and implementation (NASBE, n.d.-a).

The American School Health Association (ASHA) has also issued a similar set of assertions regarding the importance of nutrition policy adoption in schools in a resolution adopted by the ASHA Board of Directors and its members. Their recommendations parallel most of those listed above and can be viewed in their entirety in Appendix A (ASHA, 2005a).

In order to determine the degree of implementation of such policies, the School Health Index (SHI) can be used as a tool to evaluate progress in individual schools. The national data using this survey is reported in the School Health Policy and Program Survey (SHPPS), conducted by the Centers for Disease Control and Prevention. The survey reviews practices in classrooms, schools, districts, and states and reports its findings in periodic reports (CDC, 2008a). The 2006 School Health Program and Policy Survey concluded that schools continue to need improvement in passing health related policy. This is not unlike the conclusion reached at the end of the SHPPS 2000 study which asserted that there was a lack of health related policies in place (CDC, 2008a; O’Toole, Anderson, Miller, & Guthrie, 2007). Although some improvement was noted in a variety of areas; overall, there is much to be done.

Areas that continue to be problematic are the lack of policies regarding the use of salt, sugar, or fat in the preparation of the food and too little encouragement for students
to consume a healthier diet that is high in fruits, vegetables, and whole grains (O’Toole et al., 2007). In the 2006 School Health Policy and Program Study, schools were evaluated for policy placement that discouraged unhealthy eating habits. The presence of health education practices to discourage unhealthy eating patterns from 2000 to 2006 were analyzed and deemed not significantly different (83.5% to 83.8% respectively; Kann, Brener, & Wechsler, 2007).

The 2006 School Health Policies and Programs Report also revealed that almost all states and most districts are failing to support a healthy school environment due to a lack of policy development and enforcement (O’Toole et al., 2007). The Action for Healthy Kids organization claims that many of the policies currently in place in the schools do not support healthy eating recommendations. Moreover, the policies may actually promote the consumption of low nutritional value foods (AFHK, 2004). O’Toole et al. (2007) concurred stating that “SHPPS 2006 provides a disconcerting picture of the continued, widespread availability of foods and beverages high in fat, sodium, and added sugars as a la carte choices, in vending machines, and in school stores” (p. 518). A USDA report on competitive foods also confirmed that inconsistent messages continue to abound where children learn about good nutrition in class, but experience a very different scenario in the other areas of the school (Watkins, 2001).

In addition to government agencies providing direction to schools regarding this problem, many other organizations have been formed that also provide needed insight and advocacy. The Alliance for a Healthier Generation (AHG) is a new organization committed to promoting the health of children, particularly in the fight against childhood
obesity. The Alliance has evolved from the joint efforts of the William J. Clinton Foundation and The American Heart Association. Among other activities, this organization has developed a guideline chart for competitive foods for grades K through 12. Nutrient recommendations are provided for each level of school (elementary, middle, and high) for many nutrients (AHG, n.d.). This provides reinforcement for other national activities to improve school food policy.

In order to examine the current climate in schools regarding nutrition policy implementation and practice, the School Nutrition Association (formerly the American School Food Service Association) conducted a study in December 2006 and published an analysis of these local policies (most of which were centered on competitive foods) from 140 school districts in 49 states. The purpose of the report was to describe the qualities of the wellness policies adopted by the nation’s schools districts and to provide information on trends. Findings from this important study revealed that 95% of schools were offering nutrition education for at least some grades, but 55% of schools used food as a reward, 65.7% of schools had policies for foods served at classroom parties, 69% had food policies for fundraising, 87% had nutrition policies for vending machines, and 88.6% had policies for a la carte food items (School Nutrition Association, 2006).

Clearly, there are areas being addressed only occasionally and improvement is needed. By addressing all areas rather than some, a more consistent message would be supported by the school system.

Other agencies have examined nutrition policy and practice in the schools. One such agency is the National Center for Education Statistics (NCES). In a report titled
Calories In Calories Out it was reported that the average elementary school teacher devotes 13 hours (per year) of instruction to the topic of nutrition (NCES, 2000), whereas 50 hours have been recommended for behavior change by the CDC report entitled Guidelines for School Health Programs to Promote Lifelong Healthy Eating (CDC, 1996). Nutrition education is just one area in the school requiring policy to promote healthy lifestyles.

In order to provide comprehensive nutrition services in schools, nutrition education must occur. Nutrition education should be guided by policy implementation in each school and be developmentally appropriate for the students in each prospective grade (American Dietetic Association, 2003). Barriers to teaching nutrition in schools have been identified by teachers to include lack of support by the school and inadequate training in nutrition education. The National Center for Education Statistics also reported that those teachers who received in-service instruction were performing with equal competence in nutrition education as their counterparts who had received college training (NCES, 2000). The American Dietetic Association (ADA) supports nutrition education and highlighted their recommendations in a teleseminar in February 2005 entitled Welcome to Wellness. The first suggestion was to provide students in Pre K through grade 12 with nutrition education. In addition, it was suggested that nutrition education be offered in the cafeteria and to include coordination between the cafeteria staff and the teacher. Third, it was suggested that the students receive consistent nutrition messages. Last, it was recommended that all state and district health education standards include nutrition education (Miller, Caldwell, & Godfrey, 2005).
It is important that school food service staff take part in the nutrition education process in the classroom (National Center for Education Statistics, 2000). Teachers remarked that barriers to this practice do exist, particularly in the area of logistics. When interviewed regarding these barriers, 49% of the teachers listed no barriers at all whereas the other 51% stated that there were, in fact, various barriers that prevented coordination between the two areas. Barriers included lack of a kitchen on site (9%), the way in which the meal program operated (11%), teachers being unsure of what activities are possible (17%), insufficient interaction time (21%), insufficient time for food service programs (22%), difficulty in schedule coordination between the cafeteria and the classroom (19%), lack of administrative support (6%), and lack of interest on the part of the food service staff (11%; NCES, 2000). When teachers were surveyed regarding areas that they felt would provide the most support for nutrition education, they overwhelmingly agreed that healthy school cafeteria meals would provide the best resource of support (NCES, 2000).

Those who work in the school system are in a unique position to play an important role in educating about and modeling good nutrition practices. One such individual who can have a profound impact is the school food service director. This professional must possess multiple skills to be proficient in his or her job and furthermore requires training and professional development opportunities (Wechsler, McKenna, Lee, & Dietz, 2004). The Bureau of Labor Statistics does not have a specific job description for the school food service director; rather it specifies a general description of a food service manager. General responsibilities include training of employees, oversight
regarding standard compliance, training staff regarding policies and practices, coordination of activities, daily operation oversight, and other administrative and human resource functions (United States Department of Labor, 2008–2009.). The National Food Service Management Institute (NFSMI) has developed a listing of competencies, knowledge requirements, and skill statements for school food service directors. The functional areas that are outlined include basic or entry level requirements and advanced level requirements in 14 different areas. The competencies can be divided into two major subcategories: administrative and health/safety (Nettles, Carr, & Asperin, 2009). Please refer to www.nfsmi.org to view.

In addition to previously described attributes and responsibilities, a school food service director must perform many job duties and shares the role of entrepreneur, manager, and nutritionist (Carr, 2003). Each role is equally important and to be effective as a professional, this individual must be able to perform well in each capacity. In a recent report, the Institute of Medicine (2007) outlined specific guiding principles that should be carried out by schools due to the significant calorie contribution that the schools provide each day to the average child. The guiding principles are directly related to the role of the school food service director and depend on this individual for appropriate implementation. In addition, the Centers for Disease Control and Prevention have listed the school as a place that is inherent to the protection of the future health of Americans as part of their Healthy People in Healthy Places, which is a subcategory of a larger report called Health Protection Goals: Criteria and Objectives (CDC, 2009a).
The role of the school food service director in the development, implementation, and/or enforcement of policy governing the use of food on the school/campus is significant in light of the future health status of the children who attend the school. This person has also been identified by the government as a key player in the development and implementation of the School Wellness Policy Mandate (Miller et al., 2005). Specific policy requirements include goals for nutrition education, nutrition guidelines, guidelines for reimbursable meals, and guidelines for community/parent involvement (Miller et al., 2005). The Institute of Medicine (IOM, 2005) also issued a statement regarding the importance of school food service directors to be trained in obesity prevention efforts. Activities and continuing education requirements need to be added to the professional preparation that is required of individuals in this role. When examining the requirements of this position, however, it is evident that they are broad and not well defined. In the Ohio Action for Healthy Kids (OAFHK) state profile for 2005, for example, it was reported that the state of Ohio does not have a policy on district food service directors. It also does not offer certification, licensure, or endorsement to the district food service director, nor does it have a policy requiring the district directors to have any of the above (AFHK, 2005).

In fact, little support is being offered by all states regarding the training and promotion of the school food service director with only about one fourth of states offering certification, endorsement, or licensure for the profession and about the same amount failing to require even minimum qualifications (O’Toole et al., 2007). This is in sharp contrast with the many organizations and professional groups calling on schools to
hire qualified directors for the food service programs (AFHK, 2006a; ADA, 2003; IOM, 2005). Gross and Cinelli (2004) viewed the lack of education standards for school food service directors as a challenge to the school food service programs. Proper training is imperative so that school foodservice directors understand nutrition and health issues (Wechsler, Brener, Kuester, & Miller, 2001).

In order for a school foodservice director to be effective, it is important that they be properly trained and also have confidence in their ability and skill set that is needed to perform their job effectively. One problem noted by various groups is the fact that there is a great deal of variability in the preparation of the school foodservice director (ADA, 2003). Some are high school graduates who have “climbed the ladder” to their present position while others are master’s degree prepared registered dietitians. The joint Position Paper of The American Dietetic Association, The Society of Nutrition Education and the American School Food Service Association states that school food service personnel should be qualified in order to hold the position due to the important contribution of their work in the health and well being of children (ADA, 2003).

Since school food service directors play a prominent role in the delivery of healthy and nutritious meals, it is imperative that they be involved in the implementation of school food policy. Section 204 of the Child Nutrition and WIC Reauthorization Act of 2004 stated that wellness policies for the school should be developed by many individuals, including the school food authority and that assistance from the government would be available in order to prevent disease attributed to poor diet, establish a healthy school nutrition environment, and promote good nutrition (U.S. Department of
Agriculture: Food and Nutrition Service, n.d.-c). It is also recommended that school food service directors be educated and certified in their field in order to provide the best service to the school in which they work (Watkins, 2001). It is not known whether school food service directors with more education do in fact provide better service through education and intervention than do those with less education and/or training.

In order to perform effectively, school food service directors need to be confident in their abilities to perform on the job. This confidence in one’s abilities is referred to as Self-Efficacy (Bandura, 1997). In his book, *Self-Efficacy: The Exercise of Control*, Bandura stated that a person who is more confident in his or her abilities is more likely to have a more successful, happier, and more effective life. He demonstrated how self-efficacy can be applied to success in the workplace (Bandura, 1997). Studies performed by Manojlovich (2005a, 2005b) demonstrated that nurses performed more effectively, more efficiently, and in a more professional manner when they demonstrated higher levels of self-efficacy. It was hypothesized by this writer that the public school food service district director who possessed greater self-efficacy would be the one who would behave in a more professional manner on the job. Part of this professional behavior is the development, implementation, and/or enforcement of school nutrition policy.

School food service directors also come into contact with barriers or perceived barriers to action(s) that they would like to undertake. These barriers can hinder policy development and therefore prevent optimal professional practice. Barriers might be monetary, human, or otherwise. Another goal of this study was to ascertain the perceived
or real barriers that the public school food service district director faced in regards to providing comprehensive nutrition policy within the confines of the school campus.

The Significance of the Study

Many school food service directors may also be the key person responsible for the Wellness Policy Mandate in the school. Others may have an ancillary role. It was postulated that the qualified public school food service district director who possessed self-efficacy and had overcome barriers would take a more prominent role in this responsibility and therefore, would in fact, be instrumental in the development, implementation, and/or enforcement of comprehensive nutrition policy. This policy involvement is one facet of professionalism in the field.

In this context, this research provided insight on all of the above factors and further provided direction to public school food service district directors so that they could provide the highest quality care to the students and districts that they serve. This study also assessed the importance of the role of public school food service district directors and determined the need for adequate professional preparation. High quality care/service may contribute to slowing the growth in the childhood obesity epidemic and to promote the general health and well-being of children.

The Purpose of the Study

The purpose of this study was to analyze the impact of demographic characteristics and perceived self-efficacy on the development and implementation of food related policies and practices in public schools among district school food service directors.
Research Questions

Research Question 1. How will public school food service district directors’ educational preparation influence the development and implementation of school food policy?

Research Question 2. How will public school food service district directors’ educational preparation influence school food practice?

Research Question 3. How will public school food service district directors’ level of certification influence the development and implementation of school food policy?

Research Question 4. How will public school food service district directors’ level of certification influence school food practice?

Research Question 5. Will self-efficacy influence the public school food service district director’s involvement in food policy development?

Research Question 6. Will self-efficacy influence the public school food service district director’s involvement in food policy maintenance?

Research Question 7. Will certified and non-certified public school food service district directors differ in their barrier identification regarding food policy implementation?

Research Question 8. Will demographic variables determine the level of involvement in food policy development or implementation?

Research Question 9. Will demographic variables determine the level of involvement in comprehensive food practice?
Definitions of Terms

Competitive Foods—foods that are sold outside of the school meal programs (Government Accounting Office, 2004).

Comprehensive Nutrition Policy—nutrition policies that link nutrition education, child nutrition services, healthy school environment and community partnerships (ADA, 2003).

Contracted school food service director—school food service directors who are employed by a company other than the school and that provide food service to the school.

Dietary Guidelines for Americans—Governmental recommendations for people age two and older regarding food habits, which promote health (U.S. Department of Agriculture, 2009b).

Foods of Minimal Nutritional Value—foods described in Appendix B of the National School Lunch Program Regulations. These foods do not provide required amounts of certain vitamins, minerals, or macronutrients (U.S. Department of Agriculture: Food and Nutrition Service, 2007).

Policy—“prudence or wisdom in the management of affairs” (Merriam-Webster’s Collegiate Dictionary, 10th ed., 1996).

Qualified school food service director—a person with a four-year degree in a nutrition related field, food service management or dietetics, or certification/credentialing in foodservice from either the ASFSA or a state program. All should have continuing education requirements (ADA, 2003). *Defined as “director” in the position paper.
School food service manager (director)—A person who is “responsible for the daily operations of restaurants and other establishments that prepare and serve meals and beverages to customers” (U.S. Department of Labor, n.d., p. 1). Not defined by the Department of Labor.

Self-Efficacy—A component or construct of both the Social Learning Theory and the Health Belief Model which proposed that individuals who believe that they can perform an activity or have the ability or appropriate training to perform an activity are more likely to do so (Bandura, 1997).

**Assumptions**

1. Public school food service district directors will answer the questionnaire honestly.

2. Public school food service district directors who receive the questionnaire will be able to read at a sixth grade level.

3. Public school food service district directors who receive the questionnaire will be able to speak English.
CHAPTER II
LITERATURE REVIEW

The Purpose of the Study

The purpose of this study was to analyze the impact of demographic characteristics and perceived self-efficacy on the development and implementation of food related policies and practices in schools among district school food service directors.

Introduction to School Food/Nutrition Programs

With the publication of the report from the Institute of Medicine Report entitled *Childhood Obesity: Health in the Balance* in 2005, schools were confirmed to be the primary venue of change to address the current obesity crisis in the United States. Since children spend a majority of time when they are awake at school, it is critical that education professionals should be mobilized as participants in any solution to this mounting health crisis (IOM, 2005). The involvement of schools is critical to prevent the potential shorter lifespan of today’s children that was predicted by Dr. David Satcher (USDHHS, 2001).

The National Association of State Boards of Education (NASBE) in its publication *Fit Healthy and Ready to Learn* has provided reinforcement for this assertion by clarifying that by setting an example in the cafeteria, properly managing the competitive food environment, and providing quality nutrition education, school personnel can play a role in helping children to cultivate healthy eating behaviors (NASBE, 2000). In addition, NASBE has asserted that a school cannot achieve its
academic goals if the faculty, staff, and students are not physically, mentally, and socially fit (NASBE, 2000).

Importantly, this is not the first time that schools have been asked to address a serious health issue involving the nutritional status of children. The earliest school-based feeding programs were launched to address the nutritional concerns at the opposite ends of the spectrum; those aimed at resolving malnutrition among children.

Prior to 1853, feeding programs within the schools did not exist and most children went home to eat lunch. During the Industrial Revolution, establishing food service programming in public schools was the result of efforts to address the issue of malnutrition among children. This practice was patterned after factory workers who stopped for a lunch break (Oliver, 2004). The original practice of providing lunches at school varied from city to city and frequently was governed by mothers and/or school officials. Organized philanthropy groups became involved as children’s physical and health needs became apparent. For example, The Children’s Aid Society in New York City established the first free school lunch program in 1853 (Oliver, 2004).

In the early part of the 20th century, many school meals were provided by women’s service clubs or other philanthropic groups (Oliver, 2004). The publication of a book Poverty in 1904 exposed the fact that despite earlier efforts, many children remained malnourished. Awareness regarding malnutrition coupled with a strong social conscience regarding the hungry provided the impetus for further attention to this matter.

Beginning in the 1930s the Federal government became involved in the activities of the nation’s farmers. Acts were established that aimed at assisting farmers in the
marketing of their goods. In this context, the Agriculture Act of 1935 established a mechanism whereby the United States Department of Agriculture (USDA) could purchase commodities from farmers for use in government programs. Later, when the National School Lunch Program was established, such commodities were marketed to the schools (USDA: FNS, n.d.-d).

Today, the United States Department of Agriculture (USDA) provides support for agricultural producers by providing cash reimbursement to schools that use commodities for the School Lunch Program, the Child and Adult Care Food Program, and the Summer Food Service Program. Interestingly, commodity foods are not provided through the school breakfast program. Coordination of the program is conducted through the Food Distribution Division of the USDA’s Food and Nutrition Service (FNS). The commodities for the approved programs are donated, of domestic origin, and have been deemed by Department of Agriculture to be “in surplus” (USDA: FNS, 2008d). To this day, the USDA provides a list of government commodities to the states for use by schools and other approved institutions providing care. Additional commodity items may become available at any time, then be offered to the states for selection. Depending on the market value at the time, available items and the prices for them may vary (USDA: FNS, 2007).

Schools were provided with needed commodities produced by farmers to address the nutritional deficiencies of children in the early part of the 20th century. In addition, providing commodities to the schools provided a market for farmer’s surplus goods. It was discovered that when soldiers were screened for service during World War II, many
recruits were deemed unfit to serve due to preventable nutritional inadequacies (Kennedy & Cooney, 2001). In response, the National School Lunch Program was established by The Food and Nutrition Service of the United States Department of Agriculture in 1946.

In 1966, the Child Nutrition Act sought to provide expanded services and additional support from the federal government of the National School Lunch Program. Supporting documentation in this act confirmed the existence of a substantial body of research linking the nutritional status of the child with success in learning. This evidence contributed important justification for the provision of food to students within the school setting (USDA: FNS n.d.-d).

In 1966, the first pilot school breakfast program was organized by the United States Department of Agriculture (USDA: FNS, 2009c). Originally begun to address the needs of children in low-income areas, the program was initiated in locations in which travel time to school was greatest. As such, children in such locales were at risk for reduced food intake due to increased travel time to school. In order to encourage participation, the earliest participant schools were offered reimbursement for their participation in the program. After extending the pilot program several times, school breakfast programs eventually became permanent in the Nation’s schools in 1975 (USDA: FNS, 2009c).

**Nutrition and Academic Achievement**

Evidence linking nutritional status and academic success has continued to mount since the passage of the Child Nutrition Act in 1966. The link between sound nutritional status and the ability to learn has been demonstrated through research and has been
reported in various publications (AFHK, 2004; Alaimo, Olsen, & Frongillo, 2001; IOM, 2005; Symons, Cinelli, James, & Groff, 1997). Constante (2002) has reinforced that good health and learning go hand in hand and that a healthy school cafeteria menu and comprehensive health education combine to contribute to academic success. Authors of *How Are Student Health Risks & Resilience Related to the Academic Progress of Schools* concluded that schools that limit policies exclusively to an academic/test score focus will undoubtedly leave many students and schools “behind” (Hanson et al., 2004, p. 14). As confirmation, this document contained evidence that sound nutritional status among 7th to 11th grade children resulted in improved test scores. Importantly, this result was consistent among students attending both low and high performing schools (Hanson et al., 2004).

Despite socioeconomic factors, research has confirmed that the quality of the diet also has a direct influence of school performance. In a meta-analysis, Taras (2005) confirmed that there is a strong connection between adequate iron stores and adequate food intake. Adequate food intake and adequate iron stores both are linked with improved academic performance. A recent study in the *American Journal of Clinical Nutrition* revealed that positive nutritional status not only improves educational outcomes among children with low food security, but that added nutrients also can improve scores among well-nourished children (The NEMO Study Group, 2007). Specifically, obtaining nutrients found in fruits and vegetables, and receiving fewer calories from fat have been demonstrated to promote positive outcomes on assessment tests among school children (Florence, Asbridge, & Veuglers, 2008). Also, strong empirical evidence provides a
foundation for the contention that, when supported by school breakfast programs, adequate nutritional status among children is linked to positive educational outcomes (Geierstanger, Amaral, Mansour, & Walters, 2004).

Not only is breakfast related to positive academic performance (Pollitt & Matthews, 1998; Murray, Low, Hollis, Cross, & Davis, 2007) but a 2005 study conducted at Tuft’s University revealed that even the quality of the choice at the breakfast table can affect a child’s performance on a test. This study demonstrated that low-glycemic breakfasts (those low in simple sugars) improved memory and test performance among the children who were the subjects (Mahoney, Taylor, Kanarek, & Samuel, 2005). In this regard, Carr reported that major benefits to the implementation of a school breakfast program are threefold:

- the promotion of social interaction for children;
- its contribution to nutritional adequacy;
- the reduction of stress and time pressure for parents (2008).

Although breakfast is beneficial for a variety of reasons, successful implementation of a school breakfast program is not without impediments. Challenges to implementation have been identified as:

- food preferences of students;
- stigma attached to perceived low socioeconomic status;
- no knowledge of the program by parents; and
- lack of school staff support for starting a program (Carr, 2008).
To address the problem, McDonnell, Probart, Weirich, Hartman and Birkenshaw (2004) recommended that school foodservice directors can increase participation in school breakfast programs if they employ several tactics. Identified strategies include:

- Locate an individual who will spearhead the program,
- begin with a pilot program,
- identify student food preferences,
- provide healthy options,
- market the program and
- learn from others who have initiated successful programs.

These suggestions parallel the work of Carr. Some have questioned whether school breakfast consumption leads to superior nutrient intake by children. Crepinsek, Singh, Bernstein, and McLaughlin (2006) determined that children who eat school breakfast do not have superior nutrient intake overall, but do consume more nutrients at breakfast when compared to children who do not.

Despite this emerging body of evidence, confirmation of the link between nutritional status and academic performance remains in question among many. Recently, a meta-analysis of Coordinated School Health Programs and academic achievement, published in the *Journal of School Health*, revealed limited evidence from scientifically rigorous evaluations to support a link between specific nutrition interventions and academic outcomes among school-age learners (Murray et al., 2007). This report raises questions regarding earlier recommendations regarding nutrition and achievement and further confirms the need for additional research.
School Food Practices Today

At present, many government agencies, advocacy groups, and the media have focused a great deal of attention on childhood nutrition. This is due in large part to the previously discussed obesity crisis that figures prominently in today’s headlines. Many governmental agencies and organizations have offered their recommendations to schools to improve policy and practice in light of this ever-challenging problem.

Child Nutrition and WIC Reauthorization Act

As early as 1966, Congress acknowledged the link between learning and good nutrition by providing financial support and technical assistance to enrich the National School Lunch Program. Through the years, this program has been expanded in order to better provide children with the nutrients that they require (USDA: FNS, 2007).

The most recent update of the Child Nutrition Act took place in 2004, when President Clinton signed the bill that reinforced that schools were to serve as the primary agency of change in addressing the health status of children (USDA: FNS, n.d.-a). A primary reason this mandate was established was to intervene in the childhood obesity epidemic. This update of the Child Nutrition Act of 2004 required schools that receive reimbursement for breakfast or lunch to implement a wellness policy (USDA: FNS, n.d.-a). This Act included the stipulation that all schools that received any reimbursement for a school breakfast and/or lunch program were required to implement a School Wellness Policy beginning in the fall of the 2006-2007 academic year (USDA: FNS, n.d.-a).

There are five basic components of the Federal Wellness Policy mandate:
goals for nutrition education, physical activity and other school-based activities that promote health. These activities are to be determined by the local educational agency,

- nutrition guidelines for all foods located on the school campus, again as defined by the local education authority. These guidelines are to promote not only student health but are to be anti-obesity in nature,

- guidelines for reimbursable school meals that are in accordance with the Child Nutrition Act, and

- plans for measuring the previous goals and guidelines and

- demonstrated community involvement in the above activities (USDA: FNS, n.d.-a).

In Fall 2006, Action for Healthy Kids (AFHK) conducted a study to assess progress in the implementation of the Wellness Policy Mandate. This analysis revealed that at that time, only 54% of the districts met the minimum requirements of the mandate. Only 14% had specified goals for meeting the nutrition education mandates (AFHK, 2006a).

The mandate seeks to improve the overall health and well-being of school children. It has been described as a focus on the “whole child” more than just a disease prevention strategy (Miller et al., 2005).

At present, there are ongoing challenges to the successful implementation of school wellness policies. In the Action for Healthy Kids Fall 2008 summary report
entitled *Progress or Promises*? many “Gaps” are identified. The identified gaps include such matters as:

- gaps in access to healthy foods at school,
- gaps in adequate preparation/certification for the nutrition director/manager, and
- gaps in parent engagement. (AFHK, 2008).

Moag-Stahlberg, Howley, and Luscri (2008) have provided an overview of local wellness policy development and implementation. Information regarding policies was obtained from the advocacy group, Action for Healthy Kids (AFHK). Policies determined to be in compliance with the mandate include nutrition education, nutrition guidelines for foods available on the school campus during the day, and guidelines for school meals, which are not less restrictive than the federal standards. Areas found to be at a low level of compliance include: teacher education regarding the teaching of nutrition (43% in place), qualified food service staff/continuing education for food service staff/or requirements for professional preparation of food service staff (37% in place), and nutrition standards for foods served at school events, field trips, and after school programs (34% in place) to name a few. The report concluded by stating that in order to sustain wellness practices, it is necessary to immediately attend to staff development activities and the placement of qualified staff in addition to “policy implementation, evaluation and revision” (p. 567).
Government Agencies and School Health

United States Department of Agriculture (USDA)

The mission of the United States Department of Agriculture is to serve as a resource and leader in the protection of the American public in the areas of agriculture. It also serves as the authority regarding natural resources and any policy, management, or science-based information that may offer insight into effective practice in either area (agriculture or natural resources). The vision of the organization is to deliver programs in an efficient manner in the dynamic environment of a food and agriculture system that is rapidly evolving (USDA, 2004). In 1999, the Food and Nutrition Service (FNS), which administers the USDA food programs, provided Congress with a written report on the status of promoting healthy eating in the United States (USDA: FNS, 1999). In this report, nutrition education was identified as a required element for positive change in the health status of Americans. Nutrition education also was identified as a necessary step in the attainment of the nation’s health goals (USDA: FNS, 1999). The report particularly emphasized the need for a “strengthened policy foundation for nutrition education . . . throughout all programs” (USDA: FNS, 1999, p. iii). Two of the 14 recommendations in this report focused on the desirability of making “nutrition education a priority.” FNS also declared that its goal was to include it in all programs supported by the USDA (USDA: FNS, 1999, p. 11). Nutrition education was identified as a key for reaching the health goals of fighting hunger, reducing food insecurity, and decreasing health problems. This report concluded that the American diet poses a definite challenge to the health of the public because of the strong influence that it exerts on morbidity, mortality, and
economic costs (USDA, FNS, 1999). In addition to an overview of the Child Nutrition Programs including the School Lunch and Breakfast Programs, this document promoted a health, nutrition and behavioral program called the Team Nutrition Program.

**Team Nutrition (TN)**

*Team Nutrition* is a comprehensive, behavior-focused program that promotes sound nutrition choices and physical activity among the children of the nation. It focuses on schools, parents, and the community and seeks to continually improve school meals and to encourage healthy choices by the nation’s school children (USDA: FNS n.d.-c). Team Nutrition is comprised of three foundational components:

- Training and Technical Assistance for Healthy School Meals,
- Nutrition Education, and
- School and Community Support.

All components of the program utilize the Dietary Guidelines for Americans (DGA) and MyPyramid as the basis for all of its activities (USDA: FNS, n.d.-c). The Dietary Guidelines for Americans (DGA) is a joint effort between the United States Department of Agriculture and the United States Department of Health and Human Services (USDHHS) that serves to advise Americans on health promotion and prevention of disease. These recommendations form the basis for all of the United States Federal nutrition policy and nutrition education activities (USDA, 2009b). MyPyramid is a food plan guide for all Americans age 2 and over. It is intended for healthy individuals and provides the necessary tools to assist in building a healthy diet (USDA, 2009a).
For the first component of the program, Training and Technical Assistance is comprised of three strategies that are utilized to achieve the goals of the program:

- to link the cafeteria with other areas in the school to unify the message of good nutrition,
- to create awareness in both the school and community regarding the importance of good nutrition, and
- to utilize sound business practice in order to keep the food service program financially viable (USDA: FNS, n.d.-c).

A second component of the Team Nutrition Program is that of Nutrition Education. Again, children in the nation’s schools are encouraged to follow the recommendations in the Dietary Guidelines for Americans. These guidelines serve as the basis for nutrition instruction, which is received in the school setting, and also form the foundation upon which cafeteria menus are built. In addition, competitive foods are encouraged to be based on the principles embraced by the guidelines. The Dietary Guidelines for Americans (DGA) are listed in Appendix B.

The third component of the program cultivates bridges between both the school and the community. Part of the focus of the program is to implement and adopt policies within the school that support healthy eating. Also, the program provides resources to ensure that success is achieved while encouraging environments that support these policies. An example of a resource is the parent education handouts that serve to provide ideas for families to adopt healthy lifestyles. These handouts include advice on shopping, reading labels, making healthy snacks, and becoming more active (USDA: FNS, n.d.-c).
In 2001, the federal government confirmed that practices in the nation’s schools were probable contributors to health risks in children. In a report by the Food and Nutrition Service subdivision of the United States Department of Agriculture, competitive foods available in schools were blamed for jeopardizing nutrition programs and their potential effect as well as playing a role in unhealthy eating habits of children which may contribute to future health risk (Watkins, 2001). In this document, competitive foods are specified as “Foods of minimal nutritional value,” and “All other foods offered for individual sale” (pp. 4-5).

The report further implicated competitive foods for their role in reducing participation in the school meal program and for sending a mixed message to students (Watkins, 2001).

**Child Nutrition Programs (CNP)**

The Food and Nutrition Service (FNS) subdivision of the USDA is responsible for the administration of Child Nutrition Programs (CNP) in the United States. Through both education and food assistance programming, the goal of the FNS is to provide a healthier diet not only for children, but needy families as well (USDA: FNS, 2009a).

All centered on the school environment, there are several Child Nutrition Programs in the United States. These programs include the National School Lunch Program, the School Breakfast Program, the Special Milk Program, Summer Food Service Program, After School Snack Program, and the Child and Adult Care Food Programs (USDA: FNS, 1999). These programs provide food in the forms of meals and snacks to the nation’s children.
National School Lunch Program

The National School Lunch Program provides nutritionally balanced meals to millions of children in the United States. Lunches may be offered at free or reduced cost to allow access for low-income families. Participation in the program is open to all public or nonprofit private schools or residential child-care programs grade 12 or lower (USDA: FNS, 2007). Eligibility for this program is determined by income. Children whose family incomes are at 130% of the poverty level receive free lunches and those with family incomes between 130% and 185% of the poverty level are eligible to receive reduced price lunches (USDA: FNS, 2007).

According to FNS guidelines, school lunches are to follow the recommendations listed in the Dietary Guidelines for Americans. As such, school lunches must provide no more than 30% fat content or 10% saturated fat content, and must provide one-third of the Recommended Dietary Allowance for calories, protein, Vitamins A and C, iron, and calcium (USDA: FNS, 2007). States select food commodities from a list that is provided by USDA. These commodities are called “entitlement” foods and schools are reimbursed at 16.75 cents per meal (based on 2006-2007 rates; USDA: FNS, 2007). Additional foods may become available periodically and may be offered to states for selection.

School Breakfast Program

As discussed earlier, the National School Breakfast Program (NSBP) was piloted in 1966 and became a permanent fixture in schools in 1975. Like the National School Lunch Program, NSBP is available to public and non-profit private schools and residential child care institutions. Even though it is a federal program, it is administered
through state education agencies and is available free or at a reduced cost to increase participation. The NSBP must meet the same nutritional guidelines as the National School Lunch program, with exceptions. The specific exceptions are that specific nutrients must be met at one-fourth the daily requirement, rather than one third. Schools receive cash subsidies from the government if they choose to participate in the program. Reimbursement rates (per meal) for breakfast for the 2008–2009 school year are: $1.40 for free breakfasts, $1.10 for reduced-price breakfasts, and $0.25 for paid breakfasts. Schools may receive higher reimbursements if they have at least 40% of their students receiving free lunches (USDA: FNS, 2008c).

**Special Milk Program**

The Special Milk Program is a service available to institutions that do not participate in other Federal child nutrition meal programs. This program is used to reimburse schools for milk served to kindergarten students. Many of these students are not in school for a full day and do not participate in the National School feeding programs. While reimbursement is provided by the Federal government, this program is administered via state education agencies. Milk types include flavored or unflavored milks and those with varied fat contents. All milks are fortified with Vitamins A and D in accordance with Food and Drug Administration specifications. The projected cost of this program for the 2008–2009 school year is $0.1825 cents per half pint of milk (USDA: FNS 2008a).
Summer Food Service Program

Free or reduced-price meals and snacks also are distributed during the summer months through the Summer Food Service Program. This program was created to address the gap in services for children that can occur when school is not in session. Children in low-income areas may be at risk because they depend on school meals for their major source of nutrition during the school year. When school is not in session, such children do not have this nutrient source on which they can depend. Local sponsors of after school programs or activities can obtain reimbursement for food that is served when combined with the featured activity program during the summer months when school is not in session (USDA: FNS, 2008b).

After School Snack Program

In 1998, congress expanded the National School Lunch Program to include a provision to fund reimbursement for snacks for children participating in after school programs. The purpose of the After School Snack Program is to add nutrients to the diets of students and to complement the physical or creative activities that are provided in such programs. To be eligible for reimbursement, a school must participate in the National School Lunch program and must sponsor an after school program. Requirements mandate that specific kinds of food items must be present in the snack including a combination of two or more of the following: one serving of fluid milk, one serving of meat or alternate, one serving of vegetable or fruit/juice, and one serving of grain (USDA: FNS, n.d.-b). In the 2008–2009 academic year, reimbursement for the foods was $0.71 for free snacks, $0.35 for reduced rate snacks, and $0.06 for paid snacks. Sites
are able to provide this program if at least 50% of their population is qualified for either free or reduced price lunch during the school day (Federal Register, 2008).

**Child and Adult Care Food Programs**

The Child and Adult Care Food Program is a resource that is designed to assist in the provision of healthy foods to child care facilities. Funding is provided through federal grants given to states and distributed through a state educational or alternative designee.

The program can be used for eligible public, non-profit, child-care centers and for profit centers that receive title XX (Social Services Block Grant Program) funds for at least 25% of their population. The program can also be used if 25% of the population that they serve is eligible for free and reduced price meals.

Adults also may benefit from this program. Adult day care centers are eligible if at least 25% of their population receives benefits under title XIX (Medicaid Funds) or XX (Social Security Funds). Under this program, centers can receive either cash reimbursement or may receive commodities (USDA: FNS, 2009b).

**National Food Service Management Institute (NFSMI)**

Established in 1989 by Congress, The National Food Service Management Institute serves as the resource center for United States Child Nutrition Programs (Raineville & Carr, 2001). The mission of the organization is to provide continuous improvement by providing education, research, and resources in order to promote excellence in the Child Nutrition Programs.

In order to assist with its mission, NFSMI issued a document in 1996 entitled, *Competencies, knowledge, and skill statements for district school nutrition*
directors/supervisors. Updated in 2001, this publication detailed the competencies, knowledge, and skills required for effective school nutrition directors (Raineville & Carr, 2001). Updated in 2003, and again in 2009 this document identifies 10 areas of responsibility that are essential in the effective performance of the school food-service director. The areas of function can be divided into subcategories necessary for the efficient functioning of a commercial kitchen. Broad categories include managerial and related functions, meal planning, and nutrition, as well as food safety and sanitation.

Support for school food service directors from the NFSMI is accomplished through the development of training programs and support materials and through the provision of a foundation for the certification program for school food service personnel. The certifying credential which verifies completion of the program is that of the School Foodservice and Nutrition Specialist (SFNS), and is awarded by the American School Food Service Association (Now SNA; Raineville & Carr, 2001). The complete list of competencies and subcategories of essential, efficient function can be viewed at the association’s website: www.nfsmi.org.

United States Department of Health and Human Services (USDHHS)

The United States Department of Health and Human Services (USDHHS) is a cabinet level agency consisting of over 300 programs that seek to provide essential human services and health protection to the public. The agency works jointly with state and local governmental agencies to provide needed services for the public, including such programs as Medicare and Medicaid (USDHHS, 2008). Additional examples of agencies
housed within USDHHS include the National Institutes of Health (NIH), the Food and Drug Administration (FDA), and the Centers for Disease Control and Prevention (CDC).

**The National Institutes of Health (NIH)**

The National Institutes of Health (NIH) is the predominant organization in the federal government responsible for conducting, promoting, and supporting medical research and its support. The NIH had its beginnings in the Marine Hospital of Staten Island, New York, in 1887. The goals of the agency are fourfold and include:

- to advance health protection through discovery, strategies and application,
- to assure the nation’s ability to prevent disease through resource development, both human and physical
- to ensure a high return rate to the public for investment in research while expanding the knowledge base in the scientific and medical arenas, and
- to encourage scientific behavior and practice that is high in ethical conduct and responsibility (USDHHS: NIH, 2009, 2010a).

Since 2004, NIH has funded school-based obesity prevention programs to reduce health risk in children. In addition to supporting programs that may reduce childhood obesity, this funding opportunity seeks to discover evaluation strategies, which compare different interventions, or different interventions, which may contain a positive synergistic effects in this population (USDHHS: NIH, 2010b).

**The National Heart Lung and Blood Institute (NHLBI)**

The National Heart Lung and Blood Institute (NHLBI), a subsidiary of the National Institutes of Health, fosters the same basic commitment to medical research of
the NIH, but focuses on diseases of the Heart, Lung, and Blood. Conditions associated with Sleep Disorders are also a focus of the NHLBI. The NHLBI also advances and evaluates interventions that seek to prevent disorders of the heart, lung, and blood as well as sleep disorders. Educational information for use in practice by health professionals is developed by the organization as well (USDHHS: NHLBI, 2009).

**We Can!**

*We Can!* is a cooperative program between NHLBI, The National Institute of Diabetes Health and Development and the National Cancer Institute designed to prevent childhood obesity among youth ages 8 to 13. The program provides helpful resources to families and communities. The focus of the program is on three important items:

- improved food choices,
- increased physical activity and
- reduced screen time (NHLBI, n.d.-a).

*We Can!* can be adopted by communities and groups in a variety of venues. The program offers advice for not only individuals themselves, but also families and communities. Schools can become involved in the program by implementing curricula designed to address the three key items listed above. Educational materials that assist in teaching healthy eating habits, quizzes, and handouts are in downloadable format on their website. The materials are currently being utilized in elementary and middle schools in both classroom and after school settings (NHLBI, n.d.-b).
The National Academy of Sciences (NAS)

The National Academy of Sciences, housed within the Department of Health and Human Services, was commissioned in 1863 by President Abraham Lincoln for the purpose of reporting scientific research and information to any department in the government (NAS, 2010). The academies are comprised of individuals with scientific expertise in many different fields. The organization’s purpose is to promote the general welfare of the American public through scientific and technological research and through the promotion of science in general. The NAS is comprised of a group of distinguished scientists who engage in this research and provide the necessary advice and information to governmental agencies. One subgroup in the academies is the Institute of Medicine. This group of scientific professionals provides advice to schools, parents and other individuals regarding childhood obesity and the contributing factors that promote this epidemic (IOM, 2008).

Institute of Medicine (IOM)

The Institute Of Medicine subdivision of the NAS in the Department of Health and Human Services primarily focuses on medical and health issues that may affect both the government and/or the public. The IOM serves in an advisory capacity outside of the government so that governmental agencies may be informed of evidenced base research (IOM, 2008).

In 2005, childhood obesity was addressed by the IOM report Preventing Childhood Obesity: Health In The Balance. In this report, as introduced earlier, roles of both the home and the school were discussed in context to this critical health issue. This
document asserted that both schools and families play an instrumental role in providing obesity prevention measures.

Schools provide many opportunities to practice healthy eating habits. Consistent messages in the classroom, cafeteria, and after school programs all offer an occasion to reinforce healthy eating behaviors.

The IOM provides a segment in the report entitled *Healthy Home Environment*. In this chapter, the IOM asserts that parents can prevent health problems by understanding their role as “policy makers” (p. 337). As such, parents make decisions regarding what foods to buy and serve. They also serve as role models regarding dietary and exercise behaviors.

In April 2007, the IOM released a report *Nutrition Standards for Foods in Schools: Leading the Way Toward Healthier Youth* that provided guidance regarding foods and beverages that are served in the school in competition with the school meals programs so that a healthy environment could be promoted. This guide provides a tier system in which these foods may be categorized regarding calorie content, fat content, and specific nutrient content. The basis for the categories is the Dietary Guidelines for Americans (IOM, 2007). This document was written to augment the School Wellness Policy Mandate of 2004 (IOM, 2007). In it, foods that are available in the school environment are placed into two categories, Tier 1 and Tier 2. Tier 1 foods are for all students and contain certain nutrient requirements. Tier 2 foods are for high school students and those provided in after school programs. It should be noted that this document also supports the Dietary Guidelines for Americans as the basis of a healthy
eating plan (IOM, 2007). In closing comments, the IOM Report of 2007 emphasized the need for adoption of appropriate policies by the responsible parties within the school system.

**Office of the Surgeon General**

The Office of the Surgeon General was established in 1798 when the U.S. Marine Hospital Service was commissioned to provide care for the injured and sick merchant seamen. The U.S. Marine Hospital Service is now known as the U.S. Public Health Service which is organized under the direction of a medical officer, who is given the title of U.S. Surgeon General (USDHHS: Office of the Surgeon General, n.d.-a).

The United States Surgeon General, “America’s chief health educator,” serves to provide science-based information in order to promote health and to reduce health risk. The priorities of the office are four-fold:

- to prevent disease,
- to eliminate health disparities,
- to maintain public health preparedness and
- to improve health literacy (Galson, 2008)

The mission of the Surgeon General is “to provide the best scientific information available on how to improve their (American’s) health and reduce the risk of illness and injury” (USDHHS: Office of the Surgeon General, n.d.-b, p. 1). In 2001, the Surgeon General of the United States issued a Call to Action regarding the “epidemic” of childhood obesity and the resulting problem that occur. This document, as introduced earlier, consists of five overarching principles. They are to:
• recognize the problem as a major health threat,
• promote a healthy weight through healthy eating and physical activity,
• encourage the identification of interventions which are successful in the treatment and prevention of obesity,
• promote changes in the environment which foster obesity prevention and
• encourage partnerships which promote this vision (USDHHS, 2001).

Many of the goals provided by the Surgeon General’s Call To Action can be implemented within the school setting (USDHHS, 2001).

The first goal set forth by the Surgeon General is to recognize the problem. Schools can set up a method for identification of children who are overweight or at risk of overweight or who have unhealthy eating habits. This may be done through BMI screening or other methods in which risk can be identified (USDHHS, 2001).

In order to comply with the Surgeon General’s second recommendation, the promotion of healthy eating and physical activity, policies and programs need to be in place in the school environment so that students may achieve the objective of healthy habits. Schools may also implement programs and track their success in order to ascertain which programs best achieve the desired results. The fourth recommendation made by the Surgeon General is to promote an environment that is conducive to the prevention of obesity. Former Acting Surgeon General Kenneth Moritsugu stated that “schools can provide the optimal location to reinforce the messages of eating healthfully” (Moritsugu, 2007, p. 1089).
Consistent with the advocacy position taken by the former Surgeon General, schools can reinforce healthy eating habits through their policies and practices and also through programs that foster healthy habits. One example of a policy that encourages healthy eating is the “tier” guide set forth by the IOM. This guide is recommended as a type of rating system regarding foods of minimal nutritional value (FMNV; IOM, 2007).

The involvement of other groups in partnering with schools is also essential to success in promoting healthy eating habits in children. Both the School Wellness Policy Mandate and the Coordinated School Health Model promote schools partnering with groups (parents, families, and community members) in order to achieve their health objectives (Allensworth & Kolbe, 1987; Miller et al., 2005).

In November of 2007, the Surgeon General began the Childhood Overweight and Obesity Prevention Initiative, *Healthy Youth for a Healthy Future*. The purpose of this initiative was to prevent obesity in youth and also to foster healthy lifestyles (USDHHS: Office of the Surgeon General, n.d.-c). This initiative is served by a council made up of an established panel of experts whose purpose is to locate, champion, and initiate programs that are successful in reducing childhood overweight (USDHHS: Office of the Surgeon General, n.d.-c). The focus of the initiative is to recognize communities who have established a collaborative agenda to promote exercise and healthy eating habits in order to address obesity in children. The Surgeon General has specifically identified parents and schools as key players in the obesity prevention effort (USDHHS: Office of the Surgeon General, n.d.-c).
Centers for Disease Control and Prevention (CDC)

Although originally convened to fight malaria in 1946, the Centers for Disease Control and Prevention (CDC) has expanded in scope (2010a). As 1 of 13 major divisions of the United States Department of Health and Human Services, this organization is focused on more than the spread of disease. Rather, the present mission of the organization is “collaborating to create the expertise, information, and tolls that people and communities need to protect their health—through health promotion, prevention of disease, injury and disability, and preparedness for new health threats” (CDC, 2010b, p. 1). Listed on the organization’s website are eight strategies that are currently employed to accomplish its mission. They include:

- monitoring health,
- detecting and investigating health problems,
- conducting research to enhance prevention,
- developing and advocating sound public health policies,
- implementing prevention strategies,
- promoting healthy behaviors,
- fostering safe and healthful environments, and
- providing leadership and training (CDC, 2010b, p. 1).

In 1996, the CDC issued a report entitled Guidelines for School Health Programs to Promote Lifelong Healthy Eating supporting nutrition promotion within the school environment. The report consisted of seven recommendations centered around this goal. Interestingly, the conclusion of the document emphasized that nutrition education in its
entirety should become a national priority and involve the school and its leaders, the
community and its leaders, and the parents of the children attending the school. The
report also noted that this was necessary in order for students to achieve their full
academic potential and that this emphasis should exist from pre-kindergarten through
grade 12. It should be recognized that the report’s first recommendation centers on the
discussion of policy and its importance in the environment, particularly regarding the
comprehensive nature of the plan and of the need to tie the school food service area to the
curriculum that is taught within the classroom (CDC, 1996).

In 2007, the CDC established a new initiative focused on creating a greater impact
for the health and safety of the population and to achieve its four Health Protection Goals.
In addition, this new initiative serves to guide the organization’s decision making and to
assist in establishing priority order for activities. It is under these four umbrella goals
that all of its other goals and objectives are centered. The four goals focus on the health
of Americans in various stages of life, health in various venues, preparedness for various
health threats, and health within a global society (CDC, 2009a). In order to accomplish
these Health Protection goals, CDC has set forth a list of six Strategic Imperatives. These
imperatives include:

- Health Impact Focus,
- Customer-centricity,
- Public Health Research,
- Leadership,
- Globalization, and
• Accountability (CDC, 2009b).

The Health Impact Focus goal provides information regarding various venues in which health needs may be addressed. It is here that we find “Healthy People in Healthy Places.” Within the Healthy People in Healthy Places category, schools have been identified as one place where a person “lives, works or learns” that can play a role in protecting the individual from health risks (CDC, 2009c). Schools are one identified key location for providing protection from health risks. An objective identified under “schools” (one place to protect health) is to “improve the health and safety of students and school staff by implementing comprehensive and coordinated instruction, programs, policies, and services that involve families and the community” (CDC, 2009d, p. 1). This objective seeks to inform those in the school setting about healthy eating. It also provides recommendations for the implementation of policies and programs that can help students to acquire healthy eating habits.

**Healthy Youth**

The Healthy Youth division of the CDC provides resources, data, and statistics and information about health topics for organizations and the public (CDC, 2009c). Healthy Youth has also recommended key strategies to assist in the prevention of obesity in children. These strategies are divided into two groups. The first group is focused on foundational actions that set the stage for the behaviors/actions that will follow. Included in the foundational strategies is the recommendation to adopt a Coordinated School Health Program that will address physical activity and nutrition concerns and strengthen the nutrition and physical activity policies (CDC, 2005).
In the second group, suggested “action steps” in the list are the recommendations to implement a quality school meal program and to ensure that children have healthy choices regarding competitive foods (those foods that are sold outside of the school meals programs; CDC, 2005). Other listed suggestions address health education in a general sense and also physical activity. The CDC has developed and made available a number of tools that can serve to assist schools in the evaluation of their policies and programs or to supplement their activities focused on foods and/or nutrition. Following is a list of available resources and programs used for this purpose.

**Division of Adolescent and School Health (DASH).** The Division of Adolescent and School Health (DASH) office, a subdivision of Healthy Youth at CDC, was established in 1988 and has the purpose of preventing youth risk behaviors. This office collects data through utilizing a variety of tools such as the Youth Risk Behavior Surveillance System (YRBSS), the School Health Profiles and School Health Policies and Programs Study (SHPPS), the School Health Index (SHI), and through promoting a program entitled *Fit Healthy and Ready to Learn: A School Health Policy Guide* (NCCDPHP, 2009a). This guide is a product of the National State Boards of Education (NASBE) and is used as a model and guide for high quality school physical activity and nutrition programs. Another function of DASH is to enable its constituents to promote physical activity and healthy eating. This is accomplished through program development assistance, training and funding at the local, state, and national level. Last, the center also accomplishes its goals through evaluation of physical activity and healthy eating.
programs. Evaluation support is achieved through technical assistance to states or local agencies (NCCDPHP, 2009b).

**Food-Safe Schools Action Guide.** This document, produced by CDC and community partners, is a resource to assist administrators in preventing food-borne illness in the school setting. It helps in the identification of gaps, which can increase risk and also provides ideas for action plans to implement solutions to discovered problems. The guide provides tools and resource materials to assist schools in achieving food safety through the cooperative effort of school staff members and the community. Examples of included tools are PowerPoint slides with educational messages for administrators, and a resource guide (also for administrators) to name two (NCCDPHP, 2010).

**School Health Education Resources (SHER).** In cooperation with the Department of Health and Human Services, the CDC offers a variety of school health education materials that serve as resources in the teaching of health education. Included with these materials are the National Health Education Standards, the CDC list of Effective Health Education Curricula, and the Health Education Analysis Tool. These resources can assist schools in developing or evaluating their health education efforts (NCCDPHP, 2008a).

**Health Education Curriculum Analysis Tool (HECAT).** Recently, the Centers for Disease Control and Prevention has added an evaluation tool to support the analysis and development of evidence-based school health education curricula. The tool includes resources to enable schools to evaluate and promote sound nutrition and healthy dietary practices through developmentally appropriate instruction (NCCDPHP, 2009c). Topic
focused HECAT modules can be used by instructors to determine functional knowledge and essential by grade level in the area of nutrition among other critical content areas. Also contained in this tool is evidence-based information regarding the *Characteristics of Effective Health Education Curricula*. The National Health Education Standards serve as the foundational organizer for this tool. Healthy Behavior Outcomes are provided for children in grades K through 12 and skills are outlined for each of the eight standards. Checklists are provided that enable teachers to score their efforts.

The Healthy Behavior Outcomes listed in the HECAT guide contain suggestions for children to follow regardless of the student’s location. The Outcomes are a list of developmentally appropriate practices, which may be adopted at school, home, or when out in the community. A review of the listed suggestions reveals that many of the recommendations closely parallel those of the Dietary Guidelines for Americans. Many of the recommendations focus on portion sizes, calorie and weight control, encouragement of adequate intake of vitamin/ mineral intake, and are presented as competency checklists by grade level (CDC, 2007). The Healthy Behavior Outcomes (specific to promotion of healthy eating) are listed in Appendix C.

**Making It Happen!** Making It Happen! is a collection of stories provided by DASH/Healthy Youth that demonstrate novel approaches adopted by schools that have improved food and beverage quality in foods that are served outside of the school meal programs. These schools share their stories in this collection (NCCDHPH, 2008b). Schools can order a copy of this publication to obtain ideas that can be implemented in their school system.
School Health Policies and Programs Study (SHPPS). The School Health Policies and Programs Study is a periodic national survey designed to evaluate school health programs and policies at various levels (classroom, local, district, and state). First conducted in 1994 and again in 2000, the study was most recently updated in 2006. The three main purposes of SHPPS (2006) were to determine the characteristics of each school, to determine who was responsible for supervising the delivery of school health program components and the individual’s level of qualification, and to determine the status of collaboration between the school practices have changed since the prior reviews (CDC, 2008c).

Two areas that are related to food services were assessed. These include food-borne illness prevention and nutrition and dietary behaviors. Findings confirmed that a vast majority of middle and high schools are continuing to provide competitive foods to the students and those items are high in salt and not low fat, and beverages are not 100% juice and are very often less nutritious drinks (O’Toole et al., 2007). In addition, the 2006 SHPPS revealed nutrition practices in the schools promoting foods with high levels of fats, sugars, and salt continue to abound, competitive foods are ever-present, and the overall environment is not supportive of healthy eating (O’Toole et al., 2007).

In spite of the problems that have been confirmed, there have been several positive changes in school food service between 2000 to 2006. These changes are as follows:
• An increase in the percentage of states/districts that are prohibiting the sale of “junk foods” on the campus.
• An increase in the percentage of districts that are extending the prohibition of “junk foods” into the after-school or other extended programs or staff meetings.
• An increase in the percentage of states/districts which offered the above recommendation (2).
• An increase in the availability of low-fat foods at the school level.
• A decrease in the percentage of schools that offer deep fat fried potato products.
• An increase in the availability of healthy competitive foods. (Kann et al., 2007, p. 393)

Much of the blame for poor nutrition and childhood obesity today lies with the presence of low nutrient value “junk foods” that are available in schools. “Junk foods” are defined as foods or drinks that have low nutrient density (O’Toole et al., 2007). Nutrient density refers to the proportion of nutrients for the given calories in a food. Foods that have high amounts of fat and/or sugar tend to have high caloric value while supplying less nutritional value. These “junk foods” can compete with the reimbursable breakfast and lunch programs and thus can be labeled “competitive.”

In the 2006 SHPPS, additional inquiry focused on the qualifications of the school food service program directors. Findings regarding the nutrition services in schools were that only 15.8% of districts required certification, license, or endorsement be given the
food service manager, and only 27.4% of states offered this type of accreditation (CDC, 2008c). O’Toole et al. (2007) reported that the lack of credentialing of this individual remains as one of the most significant challenges to the improvement of school nutrition programs.

Finally, SHPPS 2006 revealed that in regard to nutrition education at the schools, a vast majority require teaching of nutrition in all levels of schools: elementary, middle, and high (approximately 77-88%; CDC, 2008c). Involvement of the food service director in nutrition education can also serve to improve the nutritional status of children. Forty-four percent of districts in the United States reported that they provided information to schools on how to increase the involvement of school foodservice directors in the classroom setting. This involvement was to teach students how to eat healthy or about nutrition in general (O’Toole et al., 2007).

The Coordinated School Health Program. Promoted by the Healthy Youth division of the Division of Adolescent and School Health of the CDC, the Coordinated School Health Program (CSHP) model addresses health issues through a coordinated approach in which the school serves as the center of health-promoting activity (Allensworth & Kolbe, 1987). This model was developed to address health and social problems faced by school children through cooperation between school professionals, families, and community health advocates (NCCDPHP, 2007). There are eight components involved in the program and each one interfaces and interacts with the others. The eight components are: Health Education, Physical Education, Health Services, Nutrition Services, Counseling and Psychological Services, Healthy School
Environment, Health Promotion for Staff, and Family/Community Involvement (NCCDPHP, 2007).

Within the health education component of the CSHP, it is recommended that health education be taught in sequence in all grades from kindergarten through grade 12, addressing all facets of health. This teaching should be organized in a health education curriculum. One of the topics to be discussed is that of nutrition, taught by a “trained teacher” (NCCDPHP, 2007).

In the nutrition component of the CSHP, it is recommended that students have foods available that are both appealing and nutritious. These appealing and nutritious foods should also be based on the U.S. Dietary Guidelines for Americans in order to meet governmental recommendations for healthful eating. The food service director is responsible for developing a menu that addresses these concerns.

In addition to serving healthy foods, it is recommended that the cafeteria be utilized as a “learning laboratory” so that nutrition and health education information taught in the classroom can be applied. Applying what is learned in the classroom strengthens the positive messages about good health. It also avoids the current problem of schools sending mixed messages to students in which the students learn about healthy eating in their lessons and then are offered unhealthy food choices in the lunch line.

The nutrition professional in charge of the school meals programs also should be qualified. This ensures that standards are met and that the food service manager possesses the necessary training to provide a high quality operation (NCCDPHP, 2007). Many food service directors have the opportunity to work with parents or are encouraged
to work with parents and families according to the recommendations set forth by many
government and advocacy agencies (AFHK, 2006a; IOM, 2005; NCCDPHP, 2007) Food
service managers working with parents and families to address nutrition related concerns
will assist in providing a comprehensive approach to those issues.

School Health Index (SHI)

The School Health Index is a self-assessment tool developed by CDC in
partnership with school administrators and others that can be used by local schools to rate
themselves regarding planning and programming in regards to health promotion. A
site-specific school health index has been developed for elementary school and another
for middle/high school. Each index contains eight modules representing various aspects
of health and prevention and is organized within the school health program structure of
the CSHP. Points are assigned to correspond with the level of implementation of policies
in each of the eight areas. Scores are totaled within each area before a composite score is
generated. This enables the schools to prioritize the areas that need to be addressed.

Several of the modules contain statements that seek to assist in the evaluation of
nutrition-related subject areas. Respondents must check the level of involvement of the
school in each area designated. They are as follows:

- Module 1: School Health and Safety Policies and Environment has five
  statements that deal with the subject of nutrition. The statements are as
  follows:
    - Prohibit using food as reward or punishment
    - Fundraising efforts supportive of healthy eating
o Restrict access to foods of minimal nutritional value.

o Restrict access to other foods of low nutritive value.

o Hands washed before meals and snacks. Most of these center on the issue of competitive foods.

- Module 2: Health Education contains one statement regarding the teaching of nutrition, such as:
  o Essential topics on healthy eating.

- Module 4: Nutrition Services contains fourteen statements that seek to assess the nutrition services environment. They are:
  o Breakfast or lunch programs,
  o Variety of foods in school meals,
  o Low-fat and skim milk available
  o Meals include appealing, low-fat items,
  o Food purchasing and preparation practices to reduce fat content
  o A la carte offerings include appealing, low-fat items
  o Sites outside cafeteria offer appealing, low-fat items
  o Promote healthy food and beverage choices
  o Adequate time to eat school meals
  o Collaboration between food service staff and teachers
  o Degree and certification of food service manager
  o Professional development for food service manager
  o Clean, safe, pleasant cafeteria
• Preparedness for food emergencies.

• Module 5/6: School Health Services/School Counseling, Psychological, and Social Services each contain one statement regarding the identification and referral of students who may have health issues affected by nutrition. The statement is: Identify and refer students with health problems affected by nutrition.

• Module 7: Health Promotion for Staff contains one statement which reads: Programs for staff on healthy eating/weight management.

• Module 8: Family and Community Involvement inquires about the participation of students and their families in the planning of meals within the school system. It states: Student and family involvement in planning meals. (NCCDPHP, 2006a)

**CDC Funded State, Territorial, and Local Education Agencies**

The DASH office of the CDC manages a grant program of monies intended to cultivate and support policy and programming that will influence the health of children. Funding for the period of years between 2008 to 2013 is focused on enriching education and policy for Asthma Management, Coordinated School Health programs, HIV prevention, Professional Development, and the Youth Risk Behavior Survey (NCCDPHP, 2008c).

In this funding cycle, the state of Ohio was awarded monies to support school policy development and programming for Coordinated School Health with an emphasis on nutrition (as part of CSHP). In addition to policy and programming assistance, the
funds have been used to provide a collaborative leadership team (Ohio Department of Education and Ohio Department of Health) located in the state to support CSHP activities, curriculum development, and professional development for school district personnel and community members (NCCDPHP, 2008d).

**Youth Risk Behavior Surveillance System**

This tool is helpful in detecting behaviors in 9\(^{th}\) through 12\(^{th}\) graders, which may put children at future health risk. It was developed in 1990 and targets six different areas. These include the use of tobacco, eating habits which may contribute to future health problems, lack of exercise, the use of substances such as alcohol or drugs, risky sexual behaviors, and general behavior which may put the individual’s safety in jeopardy (CDC, 2008d). The tool also makes comparisons between subpopulations, compares current data with previous, examines local, state, and national trends, and assesses change over time (CDC, 2008d).

The percentage of students who were obese (at or above the 95\(^{th}\) percentile for age) in 2007 was 13\%. Fruit and vegetable consumption (five or more servings per day for the week prior to the survey) in the same period was 21.4\% (CDC, n.d.-d). As fruits and vegetables are the foods that are the lowest in calories of all food groups and also the most nutrient dense, decreased consumption of these items poses a very real threat to future health. Please refer to Figure 1 to see trends from 1991 to 2007 (CDC, n.d.-d).
United States Department of Education

In 1980, the United States Department of Education (USDOE) was formed from several different governmental offices. The purpose of this department is to foster academic achievement among students and to prepare them for successful competition in the global market. Utilizing a $63.7 billion dollar budget, the department also encourages academic excellence in an environment that supports equal access through anti-discrimination policies (USDOE, 2009, 2010).

A recent priority of the U.S. Department of Education has been the No Child Left Behind Act of 2001. This piece of federal legislation has as its primary function to oversee public education of the nation’s children from kindergarten through grade 12. The purpose of the act is to provide greater flexibility for states in the use of federal funds. Flexibility allows schools to provide time for teachers to demonstrate competency...
in subject matter areas and allows various means by which to demonstrate this competency (USDOE, 2004). Other components of this legislation are grant monies to states to provide for safe and drug free schools and for support of the Carol White Physical Education for Progress Act (USDOE, 2007).

In 2002, President Bush signed the No Child Left Behind Act (NCLB). This act emphasizes freedom for communities and states to provide for the education of their children, to provide choice for parents regarding the education of their children, to promote accountability by schools, and to emphasize the importance of assessment in the learning process (USDOE, 2004). In spite of some demonstrated positive outcomes resulting from this new law, there have been criticisms. Many stakeholders feel that the education of children should be focused on the “Whole Child” and that assisting in health promotion activities serves to strengthen the educational process (The Association for Supervision and Curriculum Development, 2007). Recent developments with NCLB include requirements that states adopt standardized formulas for uniform graduation rates, that the data be disseminated to the public, and that parents receive services/tutorial services that are available to them (USDOE, 2008b).

In addition, the increased emphasis on No Child Left Behind has resulted in reduced time for physical activity and recess due to increased time spent on core academic subject (Constante, 2002; Deutsch, 2000). This reduced opportunity for energy expenditure contributes in part to the obesity epidemic facing our society.
National Center for Education Statistics

The National Center for Education Statistics (NCES), a subsidiary of the U.S. Department of Education and a partner with the Institute of Education Sciences has primary responsibility for collecting and reporting education-related data. Although the generation of statistical data focuses primarily on educational information, the center does track health-related concerns among school children (NCES, 2005).

In 1996, the National Center for Education Statistics conducted a study of Nutrition Education in both elementary and secondary schools. NCES concluded that coordinated efforts toward nutrition education produced a more focused message, but most schools were not practicing coordinated programming (NCES, 1996). Most schools provide nutrition education via the school meals programs, but very few foodservice staff educate students in the classroom or have tasting opportunities for students to try new foods or focus on behavior change or attitudes (NCES, 1996).

In 2005, NCES published a report entitled Calories In, Calories Out. In this report, elementary school practices regarding eating and exercise were examined. The purpose of this examination was to address obesity related problems through an “energy balance” approach (NCES, 2006). The selected findings in the report review such areas as: food services at the school, types of foods available both inside and outside of the cafeteria, and foods sold at vending machines and at school stores or snack areas (NCES, 2006).

In a 2000 report approximately half of the elementary teachers reported having formal instruction regarding the teaching of nutrition but only a little over one-third of the
teachers reported having access to a coordinated school nutrition policy (NCES, 2000). In addition, 13 hours were reported to be devoted to nutrition education during the school year, far below the 50 hours recommended by the 1996 CDC report Guidelines for School Health Programs (NCES, 2000).

**Professional Organizations and Advocacy Groups**

**The American Dietetic Association**

The American Dietetic Association (ADA), founded in Cleveland, Ohio, in 1917, is the largest organization of food and nutrition professionals in the nation. The organization began in an effort to assist the government in the provision of food and nutrition and food conservation during World War I with the goal of preserving health (ADA, 2009a).

The mission of the organization is “to empower members to be the nation’s food and nutrition leaders.” Along with the mission, the organization’s website lists several key areas of interest. Importantly, key areas of interest listed are that of children and obesity (ADA, 2009a, p. 1). The organization also has a practice group within its organization that focuses on school nutrition services, which seeks to inform those who provide service to the nation’s school children (ADA, 2009b).

In 2003, the American Dietetic Association published a joint position paper in conjunction with the American School Food Service Association (now School Nutrition Association) and the Society for Nutrition Education. The document, entitled *Position of the American Dietetic Association, Society for Nutrition Education, and American School Food Service Association-Nutrition services: An essential component of comprehensive*
school health programs, emphasized the provision of comprehensive nutrition education and services in conjunction with a comprehensive school health program for all children, preschool through grade 12 (ADA, 2003). This document also underscored the need for policy support for these activities (ADA, 2003).

A position statement was issued by the American Dietetic Association in 2006, which supports nutrition integrity in schools. Nutrition integrity means that all food and beverage items that are available in the school coincide with the recommendations made in the Dietary Guidelines for Americans. This requirement coupled with a healthy environment, nutrition education, and physical activity makes up what is termed “nutrition integrity” (ADA, 2006). The position paper further stated, “If a school’s setting is intended to be a learning environment for children, the issue of healthful food choices needs to be a priority.” Recommendations for promoting healthful food choices include making healthy foods available, providing information to children in the classroom and other areas of the school and communicating about healthy foods with parents. Also encouraged is the provision of healthy competitive foods (foods that compete with the food programs in the school; ADA, 2006, p. 125).

In addition to position papers, the American Dietetic Association also provides commentary regarding trends related to food and health. In 2007, the American Dietetic Association released its “Environmental Scan” for the association. In the report, future trends were highlighted and placed into themes. One featured theme reviewed the increase in the obesity issue, while another discussed the importance of a policy focus on health and wellness. This can be accomplished in schools by policy implementation that
stresses healthy lifestyles, screening efforts that can detect nutrition problems, and through the provision of knowledge so that individuals can participate in self-care (Jarratt & Mahaffie, 2007). In the discussion surrounding obesity, an important point was made regarding the increased risk for diabetes in obese children. As a result, the need to re-educate parents regarding the risk of obesity in children was stressed. Schools can also become involved in obesity prevention by improving foods available in the schools and by increased commitment to wellness policies. Coupled with the discussion regarding parent education was the emphasis on nutrition professionals and their involvement in the wellness policies in their local schools (Jarratt & Mahaffie, 2007).

Regarding the theme outlining the need for policy focus, school-based initiatives are mentioned; however, mixed success is predicted due to the federal government’s efforts being “lagging and tentative” (Jarratt & Mahaffie, 2007, p. S48). Nonetheless, the importance of the nutrition professional in the school setting is noted and emphasized due to the contribution toward the prevention of chronic disease and obesity and other conditions that are deemed “preventable” (Jarratt & Mahaffie, 2007, p. S48). Recent activity by the American Dietetic Association was their stance on the Farm Bill. Early in 2008, a plan to promote initiatives to improve the school food environment through healthful offerings and nutrition education was in place (Weber, 2008).

Action for Healthy Kids (AFHK)

Action for Healthy Kids (AFHK) is a large national organization composed of a variety of health, education, and administrative professionals who support and promote the health of children. The organization was established in 2002 after former Surgeon
General David Satcher issued a call to childhood obesity particularly via the venue of the local school (AFHK, n.d.).

Publications produced by this organization include *The Learning Connection* (AFHK, 2004), which highlights the connection between achievement and health. In this document, the organization states that schools undermine their own efforts to increase academic achievement by failing to encourage and implement policies for healthy foods and physical activity. Action for Healthy Kids concludes that by combating poor nutrition and physical activity in students, schools can boost the academic achievements of their students (AFHK, 2004). *A Mission Becomes a Mandate: Campaign for School Wellness* discusses the organization’s efforts in helping schools to develop wellness policies and to achieve the goals that they have set with their committees. In this document, partnerships with community members are emphasized and steps are offered which demonstrate the organization’s commitment to helping schools to draft and implement these policies. Included is an eight-step tool to assist in policy development (AFHK, 2006b).

**Alliance for a Healthier Generation (AHG)**

Another organization concerned with the childhood obesity epidemic and the promotion of healthy eating habits by children is the Alliance for a Healthier Generation. This group, founded in 2005, is a partnership between the American Heart Association and the William J. Clinton Foundation. The primary purpose for the organization is to halt childhood obesity by 2010 (AHG, 2009a). The organization works towards its goals by partnering with children, families, schools and industry. AHG sponsors a Healthy
Schools Program in which it offers awards to schools based on their efforts toward reducing childhood obesity. Awards can be at the Gold, Silver, or Bronze level depending on how involved the schools are in this mission. Schools who participate in the challenge can also receive free information and resources from the organization (AHG, 2009b).

Alliance for a Healthier Generation (AHG) also has produced a document, *Competitive Food Guidelines*, outlining recommendations for competitive foods in schools. This guide provides criteria for a variety of foods served in schools. These criteria include categories for fat content, sodium, and sugar (AHG, 2009c).

In addition to providing recommendations for schools, AHG has a parent focus segment available on their website. This parent focus includes information for parents so that they may assist their child in obesity prevention at home, school, out and about and at the doctor’s office (AHG, 2009d).

**American School Health Association**

Established in 1936, the American School Health Association (ASHA) is an international organization, which grew out of the former organization called the American Association of School Physicians. ASHA’s primary goal is to “safeguard” the health of school age children, and its membership is open to all professionals who espouse this goal (ASHA, 2008). More than 2,000 members belong to this organization, half of which are employed by schools and state agencies that oversee school health programs (ASHA, 2008).
In addition to general health recommendations, ASHA has provided recommendations and support for healthy eating in the nation’s schools. This organization has produced four resolutions regarding healthy food intake.

One resolution is an encouragement to schools to adopt and implement nutrition policy. It is recommended that all nutrition services in all venues be provided within the context of a Coordinated School Health Program. Safe and pleasant eating areas with adequate time provided for eating is also encouraged by this resolution. In addition, the organization supports the teaching of lifelong healthy eating habits, the use of non-food rewards and fund-raising, and partnership with families and communities (ASHA, 2005a).

A second is to provide healthy choices within the school environment. Within this resolution is the recommendation to provide at least 75% or more healthy food choices that meet the recommendations of the Dietary Guidelines of Americans, encourages the provision of information for the entire school regarding healthy food choices, and supports the establishment of standards in the school which encourage standards for competitive foods. This resolution also promotes the dissemination of information on healthy eating to students, staff, parents and administrators (ASHA, 2004a).

A third is to promote fruit and vegetable intake via policy development, which promotes greater consumption of these items by both students and staff. It also promotes the provision of fruits and vegetables within the school environment in all areas. These
areas include not only the school meals programs, but also in vending machines, at school parties, and at all school-sponsored events (ASHA, 2004b).

A fourth is to provide nutrition education within the Coordinated School Health Program. This nutrition education is to be comprehensive in nature and experientially based. ASHA recommends that nutrition education occur in a manner consistent with the National Health Education Standards, occur in pre-school through grade 12 and be provided in a way that is developmentally and culturally appropriate in an experiential format (ASHA, 2005b).

**The Center for Health and Healthcare in Schools**

The mission for this nonpartisan organization located at the School of Public Health and Health Services at George Washington University is to promote better health outcomes in children and adolescents through services and programs located in schools. The center seeks to establish partnerships between health professionals and educators with information that will assist them in health programming within the schools that will encourage the adoption of healthy habits by children. They also provide resources and help for school personnel, develop policy papers on child-related issues, and provide assistance to community organizations who partner with schools to provide services. One of the focus areas of the organization is childhood obesity. The website includes an entire page of issue briefs, reports, and other resources focused on this problem. Included in the organizations services are grant monies, an “e” journal and research papers (The Center for Health and Health Care in Schools, 2007).
The Center for Science in the Public Interest (CSPI)

Since its inception in 1971, CSPI has focused on informing the public about health-related concerns and to present information in a science-based manner. Its mission is to promote to the government, industry, and the public the link between individual’s eating habits and their health.

The group is committed to many health-related concerns, but in reviewing the list on its web site, one can see there is a predominant focus on food and nutrition (CSPI, 2009a). A recent priority area of this organization is that of school food. When examining its list of focus areas on the information page of cspinet.org, it is noteworthy that at the top of the list of six priority areas is “Support National Legislation to Get Junk Food out of Schools” (CSPI, n.d.). To this end in February 2007, the organization published a document entitled *Sweet Deals: How school fundraising can be healthy and profitable*. It is free of charge and is available on the CSPI website (CSPI, 2007a).

An additional report produced in 2007 was an analysis of school foods in the United States, *The State School Foods Report Card*. The report assigned grades to the states for their nutrition-related policies for competitive foods (those sold outside of the school meals programs). Most states in the U.S. received a grade of F. Only two states (Kentucky and Oregon) received an A-. The most common policy found was the policy to address soda sales and only 24% of states have comprehensive food and beverage policies. Evaluation of the schools was based on five key items: beverage nutrition standards, food nutrition standards, grade levels to which policies apply, time during the school day to which policies apply, and location to which the policies apply. Results of
the study conclude that even though small changes are occurring, they are inconsistent and fragmented and are not occurring quickly enough (CSPI, 2007b). CSPI is supported by funds derived from the sales of its publication *Nutrition Action Healthletter* and from donations from philanthropic organizations (CSPI, 2009b).

**National Association of State Boards of Education (NASBE)**

The National Association of State Boards of Education, begun over 50 years ago, seeks to give a voice and add value to the State Boards of Education in the nation. It is a non-profit organization that advocates for equality in schools, promotes excellence in education, and provides strength for educational policy-making (NASBE, n.d.-b). The NASBE has posted policies to encourage healthy eating on their website (n.d.-a). These policies are provided as examples that can be established in school systems to encourage and support the health of students. The organization provides an opening segment called an “Intent” in which it outlines its many recommendations. Included is a statement encouraging and promoting the use of well-prepared staff to serve nutritious foods. Also recommended is the incorporation of nutrition instruction provided within the context of a comprehensive health education program. A third recommendation is to provide an entire school environment that promotes healthy food choices. This environment is to promote fruits and Dietary Guidelines for Americans (NASBE, n.d.-a). The National Association of State Boards of Education in their 2000 document *Fit, Healthy, and Ready to Learn* emphasized the importance of coordinated policies in the school (NASBE, 2000). USDA’s Food and Nutrition Service stated that environments that support healthy eating behaviors are crucial and that policies should also support these goals (USDA:
The school was also directly mentioned as a venue for providing support for nutrition education, particularly coupled with the involvement of school staff and members of the community (USDA: FNS, 2002). *Fit, Healthy, and Ready to Learn* is promoted and featured by the Centers for Disease Control and Prevention’s Department of Adolescent and School Health. The CDC also provides support, technical assistance, and training to states and schools to promote and evaluate healthy eating activities (NCCDPHP, 2008a).

**School Nutrition Association (SNA)**

The School Nutrition Association (SNA), formerly American School Food Service Association, has promoted quality in child nutrition programs since 1946. It strives to promote quality nutrition for children. This group, which is 55,000 members strong, consists of professionals from across the United States who are in charge of providing high-quality, low-cost foods to children since 1946 (SNA, 2007a).

The organization is involved in a variety of efforts on behalf of children. SNA provides support to members through education and training and through the setting of credentialing standards (2007a). SNA also provides commentary and recommendations on a variety of subjects that surround food, schools and children.

Some recent publications by the group include a proposal of *Nutrition Standard Guiding Principles* for reimbursable meals and competitive foods within the school environment (SNA, 2007b). In addition, *A Foundation for the Future II: Analysis of Local Wellness Policies from 140 School Districts in 49 States* revealed that although a majority of the schools were addressing the school meal nutrition standards, many were
not applying these standards to fundraising during school hours, for classroom parties, or celebrations. It also revealed that about half of teachers were offering food as a reward in the classroom (SNA, 2006).

In March 2006, the School Nutrition Association (SNA) called on the United States Congress to adopt guidelines for competitive foods as there was no nutrition standard for these items (2007c). Providing a consistent federally mandated definition of competitive foods will help to promote a reversal of the current childhood obesity epidemic (Fleischhacker, 2007). As early as 2002, nutrition professionals sounded the alarm regarding the encroachment of competitive foods upon the School Lunch Program and recommended the need for Registered Dietitians to work with schools in the area of policy formulation and proper placement of competitive foods within the school environment (Kraemer-Atwood et al., 2002).

In addition to a focus on competitive foods has been that of the School Wellness Policy Mandate. In 2007, *From Cupcakes to Carrots: Local Wellness Policies One Year Later* was released and provided results from surveys to SNA director-level members regarding wellness policies at their schools. In the discussion, challenges associated with nutrition standard implementation and nutrition education implementation were reviewed. It was revealed that implementation of standards outside of the school meal programs was the greatest challenge, particularly for classroom parties, fundraisers, and using food as a reward (SNA, 2007d). Challenges were also noted, particularly those of costs in the area of actual food cost along with labor and equipment costs (SNA, 2007d). Additional challenges to the implementation of nutrition standards were student
acceptance and oversight and monitoring (SNA, 2007d). Of the many nutrition education goals set forth by school, the training of teachers was the goal most often cited as not implanted as only a third of schools reported this activity (SNA, 2007d). Barriers to the satisfactory teaching of nutrition education in the school were in order of highest incidence: teacher priority in fitting into the existing curriculum, administration priority of the same and lack of funding (SNA, 2007d). Although there is much work to be done, 78% of the respondents to the 2007 survey reported involvement in the nutrition education component of their school’s wellness policy (SNA, 2007d).

In July 2008, the president of the SNA provided the IOM with recommendations regarding nutrition standards for schools. The following recommendations were made:

- Calorie ranges need to be aligned with the DRI’s (Dietary Reference Intakes), with modified needs considered for both under and overweight children.
- Over time, reduce sodium to the range of 1,340 to 1,400 mg.
- Limit milk to 1% milk fat while not exceeding sugar levels of 28 grams.
- Provide half of all grains as whole grains.
- Increase amounts and varieties of fruits and vegetables.
- Maintain total fat in the 25% to 35% range. (SNA, 2008)

Trust for America’s Health (TFAH)

“Trust for America’s Health is a non-profit, non-partisan organization dedicated to saving lives by protecting the health of every community and working to make disease prevention a national priority” (TFAH, 2010, p. 2). Funding is obtained through a number of foundations and through individual donations. This organization’s Board of
Directors is comprised of a wide variety of professionals spanning many disciplines (law, medicine, higher education, business, and government; TFAH, 2010). In a 2005 publication, entitled *F as in Fat: How Obesity Policies are Failing in America*, it was concluded that there is a lack of coordination in this country regarding the prevention and reduction of obesity by way of state and national policies. It also emphasized the importance of the role of government in addressing this issue (TFAH, 2005). The report is a document that is reviewed by a variety of professionals, including representatives from the Institute of Medicine and various academic institutions. In its recommendations, the 2005 *F as in Fat* report called for ongoing policy research and identifies the topic of competitive foods in schools as especially important (TFAH, 2005). *F as in Fat* in 2008 again emphasizes the contribution of factors beyond individual control that are playing a role in the obesity epidemic. It suggests that making foods of minimum quality, oversized portions, and excess TV viewing culturally unacceptable should be a priority focus (TFAH, 2008). In the 2008 report, the organization provided a chart that outlined the number of states, which have enacted obesity and related regulation (see Figure 2; TFAH, 2008, p. 8).
**Figure 2.** Obesity-related laws (Used with permission by Trust for America’s Health)

*F as in Fat 2008* recommends specific guidelines for schools to follow to assist in combating obesity. They include:

- **Adopt Higher Nutrition Standards Than USDA.** In this recommendation, the organization suggests that schools set higher standards and refuse to settle for minimal compliance. They specifically state that the standards should cover “competitive foods.”

- **Ban Sugar Sweetened Drinks.** TFAH recommends adopting the IOM Tier 1 recommendations for school foods. These foods are restricted in sugar content and are promoted in the IOM publication entitled *Nutrition Standards for Foods in Schools: Leading the Way toward Healthier Youth.*
• Provide Free Drinking Water. The organization promotes access to clean drinking water and the promotion of water in place of sweetened beverages.

• Revise Food Contract Policies and Priorities to Focus on Maximum Nutrition. Competition for contracts with the school should center on companies which promote the maximum nutrition provision for children.

• Evaluate Alternative Fundraising Options that Do Not Involve Providing Food of Minimum Nutrition Value to Students. It is recommended that communities be informed regarding the competitive food environment in the schools and look for alternative, healthier ways to generate revenue for the school system.

• Provide Professional Development to School Food-Services Staff. The recommendation for this area is that schools hire appropriately certified, prepared professionals to manage the food service program and also provide continued professional development for those staff members. (TFAH, 2008, p. 101)

At the present time, there is renewed interest in the health and well-being of children; particularly since the Surgeon General’s Call to Action in 2001. Much of the current attention is aimed at reducing health risk by addressing the childhood obesity epidemic (IOM, 2005). There also continues to be a recognition of the role that adequate nutrition status plays in the academic achievement of children (Princeton University & The Brookings Institution, 2006; Symons et al., 1997). The Future of Children report states that schools provide multiple opportunities for addressing childhood obesity
The Future of Children is a joint publication of the Woodrow Wilson School of Public Health at Princeton University and the Brookings Institution. This report asserts that classroom messages of healthy eating are not supported in the practices occurring in the school (Princeton University & The Brookings Institution, 2006). They further add that FMNV foods have an old definition, are outdated, are governed by no guidelines, and are actually replacing healthy foods (Princeton University & The Brookings Institution, 2006). Competitive Foods are receiving much blame and attention in the present day child obesity focus. The school food service professional plays a major role in addressing the position that competitive foods will play in the school environment.

School Food Service District Directors

Food service directors are in a unique position to influence the health of people. Available positions are expected to increase to 368,000 by the year 2016. The Bureau of Labor Statistics expects the occupation to grow at a slower rate than others (U.S. Department of Labor, 2008–2009). The job requires a variety of skills including budgeting, personnel management, and responsibility for the overall operation of the environment in which the food is served. Food service directors are often expected to perform well under stress either with unhappy customers of unreliable or irresponsible employees (U.S. Department of Labor, 2008–2009).

While most opportunities are located in the retail and restaurant sector, some food service management positions are located within the school setting. These positions require the director to be responsible for serving safe food while operating within
budgetary constraints. The Bureau of Labor statistics estimated that in 2006, the median salary for a school food service director was $39,650 per year, which was at the lower end of the income level of all food service directors in a variety of settings (U.S. Department of Labor, 2008–2009). Most of these workers are salaried.

**Sex.** Other research examining sex/gender issues in management occupations have revealed that there are differences with regard to the representation of men and women in workplaces. In a study of male and female managers in the National Health Service (NHS), results indicate that men are more competitive with their interactions with physicians and desire winning whereas women are more interested in accomplishing tasks. Also, women employ a greater variety of tactics in accomplishing their work (Greener, 2007). Robinson and Lipman-Blumen (2003) reported that in the workplace men are more competitive and participate in vicarious behaviors while their female counterparts show increased task-orientation.

Women’s Foodservice Forum is an advocacy organization that promotes gender-diversity in the workplace. For 20 years it has been providing quality professional development tools to assist women in advancing their careers (Women’s Foodservice Forum, 2007-2009). Data provided by the Women’s Foodservice Forum state that 66% of food service managers are women in either assistant or general manager roles. The group promotes gender equality in restaurant management claiming that women feel underappreciated and undervalued in this venue (Women’s Foodservice Forum, n.d.).

**Age.** A study regarding managers’ views on health promotion in the workplace
demonstrated that there were no differences in groups when examining age or experience. Older managers tended to believe more in the company providing protection from health hazards and in the promotion of healthy eating for employees than did their younger counterparts (Linnan, Weimer, Graham, & Emmons, 2007). In 2009, a study, “Factors Influencing Competence of Food Service Directors in Managing National School Lunch Programs,” revealed that those aged 41-50 had more positive attitudes regarding nutrition and job tasks than those aged 61-70 (Kandiah, Parkinson, & Amend, 2009). Other researchers have examined continuous learning as a skill that predicts successful work in managers. They discovered that age did not predict skill in the area of continuous learning. On the other hand, experience did predict skill in this area (Maurer & Weiss, 2010).

**Qualification/certification/degree preparation.** Many groups are calling for increased training and proper certification for school food service directors. NASBE, for example, recommends that states that do not offer certification for school food service directors should consider establishing it and also points out that certification is higher than licensure although many mistake them as one in the same (NASBE, 2000). NASBE also supports the proposal by CDC that food service personnel serve as educators. The organization also supports coordinated school health. A 2001 Report to Congress submitted by the Under Secretary of Food, Nutrition, and Consumer Services concurs with the recommendations made by NASBE. The report concludes by criticizing the lack of education standards for school food service directors (Watkins, 2001). The National Food Service Management Institute reported that school food service directors with
School Nutrition Association certification rated professional development as more important than those school nutrition directors who did not have certification (Cater & Carr, 2004).

SHPPS 2006 revealed that, nationwide, about one-fourth of the states did not require school food service directors to possess a minimum level of education. Requirements among states did vary widely. About half of all districts required a high school diploma or equivalent, 5% required an associates degree, over 10% required a bachelor’s degree in nutrition or a related field, and approximately 16% required certification or licensure by the state (Kann et al., 2007). Bounds, Lofton, and Carr (2008) reported in their national study that most school district directors were not certified (37.7%), whereas 36.8% had the SNA credential, 15.2% had another (not identified) credential, 6.3% were registered dietitians, and 4.2% were licensed dietitians.

In order to identify specific skills and standards necessary for this important position, The National Food Service Management Institute (NFSMI) at the University of Mississippi issued in 2001, a paper reviewing titled Competencies, Knowledge, and Skill Statements for District School Nutrition Directors/Supervisors. It was updated in 2003. Included is a list of 13 competency areas that define the functional areas of responsibility that are essential to the performance of this job (Cater & Carr, 2004). Of note is the fact that within the job performance expectations are “establishes a leadership role in providing nutrition education as part of the total school education program” (p. 98), “established professional status for the SNP role in the education community by acquiring the education and skills necessary for leadership and management roles” (p.
100), and “maintains nutritional integrity of the SNP through implementation of Dietary Guidelines for Americans” (p. 98; Cater & Carr, 2004).

In 2008, the State of Montana’s Office of Public Instruction (OPI) published a document entitled *School Food Service Manager Essentials: School Year 2008–2009* which outlines the expectations for the individual performing this job. Included are recommendations for a knowledge base in dietary requirements for different age groups of children, the Dietary Guidelines for Americans, and common nutrients that are/should be monitored. It is also essential that these individuals be familiar with different menu planning options, have an understanding of production records, and be familiar with numerous documentation requirements. In addition, it is expected that the individual be able to do inventory, perform safety checks and practices, plan healthful meals, and ensure that civil rights are honored. Last, a segment was provided on how to make meal times more pleasant (OPI, 2008).

Adequate training and certification in nutrition can assist in policy development. Unfortunately little if any information on this subject is available in the literature. In their published report regarding the perceptions of school nutrition professionals and their role in school wellness, no published studies that identified the school nutrition professional’s role in policy development and implementation were found (Bounds et al., 2008).

**Employment length.** Length of employment in school food service as a director translates into higher salaries. Data provided by the American Dietetic Association demonstrate that those with the longest length of employment (10+ years) average
$71,000 (median) compared with those who have worked in the position for less than five years, who are earning $54,000 (median; Meyer, 2008). National research conducted by the National Food Service Management Institute revealed that most school nutrition directors were employed for more than 20 years. This was followed by 11–15 years, 16–20 years, 1–5 years and 6–10 years respectively (Bounds et al., 2008).

Employment length has also been examined in relation to the importance that school food service directors place on activities within their scope of practice. Those with 5 or more years of service place great importance on food production and service in contrast to other job duties. When examining other job duties of a school food service director, the authors found that personnel management is deemed as more important as years of experience increase (Cater & Carr, 2004).

**Salary.** In 2007, the American Dietetic Association conducted a Compensation and Benefits Survey of school food professionals. Results from the survey indicated that the median wage was $53,000 per year. This is higher than the median salary of $39,650 reported by the Bureau of Labor Statistics (2008–2009). Highest levels of pay were found in consulting and school food service positions (Meyer, 2008).

**School type.** In the state of Ohio, schools are categorized into nine types. The typology of schools categories is shown in Figure 3.
<table>
<thead>
<tr>
<th>Group</th>
<th>Type Description</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Kelly’s Island LSD, North Bass Island LSD, Middle Bass Island LSD, Put-in-Bay Island LSD, College Corner LSD</td>
<td>Rural/agricultural – high poverty, low median income. These districts are rural agricultural districts and tend to be located in the Appalachian area of Ohio. As a group, they have higher-than-average poverty, the lowest average median income level, and the lowest percent of population with college degree or higher compared to all of the groups. N = 96, Approximate total ADM = 160,000.</td>
</tr>
<tr>
<td>1</td>
<td>Rural/agricultural – small student population, low poverty, low to moderate median income</td>
<td>These tend to be small, very rural districts outside of Appalachia. They have an adult population that is similar to districts in Group 1 in terms of education level, but their median income level is higher and their poverty rates are much lower. N = 161, Approximate total ADM = 220,000.</td>
</tr>
<tr>
<td>2</td>
<td>Rural/Small Town – moderate to high median income</td>
<td>These districts tend to be small towns located in rural areas of the state outside of Appalachia. They have median income levels similar to Group 6 suburban districts but with lower rates of both college attendance and managerial/professional occupations among adults. Their poverty percentage is also below average. N = 81, Approximate total ADM = 130,000.</td>
</tr>
<tr>
<td>3</td>
<td>Urban – low median income, high poverty</td>
<td>This category includes urban (i.e. high population density) districts that encompass small or medium size towns and cities. They are characterized by low median incomes and very high poverty rates. N = 102, Approximate total ADM = 290,000.</td>
</tr>
<tr>
<td>4</td>
<td>Major Urban – very high poverty</td>
<td>This group of districts includes all of the six largest core cities and other urban districts that encompass major cities. Population densities are very high. The districts all have very high poverty rates and typically have a very high percentage of minority students. N = 15, Approximate total ADM = 360,000.</td>
</tr>
<tr>
<td>5</td>
<td>Urban/Suburban – high median income</td>
<td>These districts typically surround major urban centers. While their poverty levels range from low to above average, they are more generally characterized as communities with high median incomes and high percentages of college completers and professional/administrative workforce. N = 107, Approximate total ADM = 420,000.</td>
</tr>
<tr>
<td>6</td>
<td>Urban/Suburban – very high median income, very low poverty</td>
<td>These districts also surround major urban centers. They are distinguished by very high income levels and almost no poverty. A very high percentage of the adult population has a college degree, and a similarly high percentage works in professional/administrative occupations. N = 46, Approximate total ADM = 240,000.</td>
</tr>
<tr>
<td>7</td>
<td>Joint Vocational School Districts</td>
<td>Figure 3. Ohio Typology of Schools (Ohio Department of Education, 2007)</td>
</tr>
</tbody>
</table>

When examining the effect of school type on nutrition policy and practice, one study revealed that schools in urban settings were 3.2 times more likely to offer healthful food choices than schools in rural settings (Nanney, Bohner, & Friedrichs, 2008).
rural schools were also more likely to have policies, which allowed access to vending machines during lunch hour (Nanney et al., 2008).

**Nutrition education activities.** In 2004, the National Food Service Institute reported the results of their national survey of school food service directors. The study was conducted in order to determine competencies in the profession so that training and continuing education opportunities for the group could be planned. School nutrition directors were asked to rate nutrition education activities and their importance in the school setting. They rated educational visits to the classroom, tasting opportunities for students, and kitchen field trips of lowest importance compared to other nutrition education activities in which they might participate (Cater & Carr, 2004). The National Center for Education Statistics (1996) identified the need for coordinated efforts toward nutrition education in the schools. Unfortunately, at that time, most schools were not practicing this recommendation. The organization reported very few foodservice representatives offering nutrition education in the classroom setting.

**Employment type.** School Food Service Directors can either be employed directly by the school or are provided through a contract management company. One such company is ARAMARK. ARAMARK (2010) provides nutrition management services to approximately 3,000 schools nationwide. In Ohio, there are approximately 50 public districts that utilize contract management to provide school district directors (ODE, 2010).
School Food Service Directors and Self-Efficacy

Self-efficacy is defined as the ability to judge one’s competency based on personal capability or judgment regarding one’s personal capability (Bandura, 1997). The empowerment that results from high levels of self-efficacy influence not only relationships, but careers as well. High levels of self-efficacy can assist the worker in the workplace in many ways. A study of nurse managers demonstrated that empowered nurses were innovative, creative, and able to make quick decisions. In addition, the subjects performed well under pressure (Kuokkanen & Leino-Kilpi, 2001). Self-efficacy is comprised of four basic constructs that predict success. Bandura describes these as:

1. enactive mastery experiences,
2. vicarious experiences,
3. verbal persuasion and
4. psychological and affective states (Bandura, 1997, p. 79).

The quality of experiences in each of the constructs will determine whether an individual is empowered and to what degree they possess self-efficacy. An enactive mastery experience can best be described as performance success. In other words, if individuals are successful in prior tasks, they can expect to be successful at those attempted in the future as well. A school food service director who is successful in implementing a policy regarding cooking with low-fat techniques in order to improve the health of his or her students can be expected to succeed in other practice changes.

Examining vicarious experiences involves comparing oneself with others in order to assess competency. This would be consistent with the thought that “if he/she can do it,
I can do it.” The role of mentoring is very important in the development of this construct. Having a mentor (i.e., another school food service director) to model or call upon for advice goes a long way in the development of self-efficacy. Mentoring has been shown to reduce isolation in teachers who practice the mutual giving and receiving of advice, thus improving the work environment (O’Connor & Korr, 1996). Vicarious experience also involves skill development. Allowing school food service directors to obtain needed training serves to contribute to self-efficacy. Nurses, for example, who engage in a six-month training period prior to assuming a leadership role tend to perform better (Jenkins & Ladewig, 2001).

Verbal persuasion is also a necessary component of self-efficacy. With verbal persuasion, the individual receives positive signals or feedback from others in their environment (Bandura, 1997). An example of this would be positive comments from one’s boss or colleagues expressing faith in one’s abilities. This could also be described as positive feedback regarding one’s performance on a task or assignment from a respected colleague.

Last, psychological and affective states play a role in self-efficacy. If one is nervous, self-doubting, and possesses a high level of stress, this individual is less likely to be successful in his or her performance. Fear and self-doubt turn into a type of self-fulfilling prophecy of failure. On the other hand, individuals who have learned to cope with stress and avoid an unhealthy inward, self-questioning focus are more likely to succeed (Bandura, 1997). If a school food service director can obtain opportunities for stress reduction assistance or improve their physical health, he or she will be more likely
to be empowered and possess self-confidence. All of these elements acting positively in concert comprise what is termed the self-efficacy theory.

It is also important to note that self-efficacy can be either an individual trait or a description of a collective group of people. When people gain self-efficacy, they are said to be empowered (Bandura, 1997). Self-efficacy as a group can play a key role in exacting needed social change. This is especially helpful in working toward policy change or in health promotion activities (Bandura, 1997). A study of a variety of managers in many settings revealed that the self-efficacy of the manager coupled with the engagement of the employee served as predictors in the effectiveness of the manager on the job (Luthans & Peterson, 2002). This would be applicable to the success of the school food director in successfully implementing important portions of the School Wellness Policy Mandate.

A study of real estate managers conducted by Paglis and Green (2002) suggested that those managers with increased self-efficacy were more likely to engage in leadership activities and attempts and to be perceived as doing so by their employees. The purpose of the study was to examine why some managers are content with the status quo while others pursue needed change. Again, this is a timely concern for school food service in light of the School Wellness Policy Mandate and the need to improve school food practices in order to reduce childhood obesity and improve students’ overall health. An additional finding in this study was to link managers with higher autonomy with increased effort to change.
Clearing bank personnel in the UK were also followed regarding self-efficacy and performance. Results indicated that those managers with higher self-efficacy received higher performance ratings from their superiors (Robertson & Sadri, 1993). The implication is that measuring self-efficacy in managers may indicate future job performance. The authors concluded that their results supported Bandura’s theory that increased self-efficacy is associated with improved performance (Robertson & Sadri, 1993).

Evidence suggests that a variety of managers in a variety of settings have positive outcomes if they possess a high level of self-efficacy. School food service directors, it follows, should be expected to have a similar outcome if provided the opportunity to develop this characteristic. Following Bandura’s model, providing opportunities for success (which can serve as a springboard for future successes), providing role models, giving positive reinforcement and encouragement, and providing training for skill acquisition and stress management would all set the stage for increased self-efficacy and success in the school foodservice director.

It is important to possess this trait of self-efficacy in the work place as it often leads to needed change (Parker, 1989) and problem-solving (Bandura, 1997). School food service directors who possess self-efficacy are more likely to work toward needed improvements (including policy and practice changes) on the job. Self-efficacy also leads to better problem solving through deployment of cognitive resources (Bandura, 1997). Managers (including those who manage school food service) who lack
self-efficacy tend to feel that things in their environment are not controllable, that other people can perform better than they are able to, and those who receive negative feedback exhibit lower management functioning.

Policy-making, which is often a management function, is improved though adequate self-efficacy. People’s belief in collective self-efficacy (i.e., working together) is often needed to accomplish change. Those with high self-efficacy are more effective because they spend less time gathering information for the purpose of making policy and less time procrastinating and are more adept in devising effective strategies to accomplish their goals (Bandura, 1997). Because of the positive outcome that arises from adequate self-efficacy, obtaining information about the self-efficacy of the target population of this study is important.

In order to improve self-efficacy among food service directors, many methods can be employed. Research has confirmed that modeling is one such strategy that can be helpful to improve or develop competence (Bandura, 1997). Modeling can be achieved through continuing education programs or through professional group membership in which like professionals share experiences and techniques for accomplishing goals. Role models can be identified and serve to lead others to needed change. In addition, feedback and positive reinforcement from administration also are necessary in building the confidence of individuals. Encouragement has been shown to raise self-efficacy (Bandura, 1997). In the school setting, this encouragement can come from administration and professional personnel who interact with the food service manager on a daily basis.
Although the body of literature with a focus on empowerment/self-efficacy among food service directors/managers is extremely limited, Manojlovich conducted a study of nurses in 2005. In this study it was hypothesized that self-efficacy might be able to improve practice behaviors in the work environment. Results indicated that practice behaviors in the work place did in fact improve with increased self-efficacy.

Role-modeling, promoted in Bandura’s theory, has been recommended by Manojlovich in order to improve performance (2005a). An additional recommendation made by Manojlovich was to include verbal persuasion activities to enhance practice behaviors (2005a). Identifying successful food service directors who can serve as role models is a feasible way to improve practice and increase self-efficacy.

School Food Service Directors and The Health Belief Model

The Health Belief Model, created by Hochbaum, Kegels, and Rosenstock, consists of six main constructs, some of which have been borrowed from or enhanced by the work of others (Sharma & Romas, 2008). The constructs include:

1. perceived susceptibility,
2. perceived severity,
3. perceived benefits
4. perceived barriers,
5. cues to action, and
6. self-efficacy (Glanz & Rimer, 2005).

To enrich the theoretical underpinning of this study, several components of the Health Belief Model were utilized to construct this study’s instrument and to assist in
explaining the perceptions of the population studied. In addition to Health Belief’s construct of self-efficacy (attributed to Bandura), additional constructs of benefits and barriers of particular food service management behaviors were also explored.

Perceived susceptibility refers to the degree to which a person feels that they are likely to acquire a disease or illness as a result of their behavior (Sharma & Romas, 2008). Perceived severity refers to the degree to which the perceived illness of disease may affect one’s life. In other words, how far into one’s life would the effects of an illness or disease spread (Sharma & Romas, 2008). In this study, perceived susceptibility refers to the perception that the district school food service director has that his or her role may have on the future disease risk of the children that they influence in the school setting. Typically, this model examines the perceptions that an individual has regarding his or her own health status. In this study, however, the perception focuses on the school food service director’s perceptions regarding future disease risk of the school child. A study conducted by The National Food Service Management Institute (Bounds et al., 2008) revealed that school district managers do perceive that their role in school wellness can make a difference in the lives of children and produce healthier citizens in the future. This belief would translate into less disease and less obesity—the goal of the mandate.

The third construct of perceived benefits refers to the particular advantages of adopting preventive health behaviors. In this construct, individuals would be motivated to practice healthy behaviors in order to acquire these benefits, such as taking good care of oneself or to detect a sign or symptom of an illness early on so that treatment could be pursued (Sharma & Romas, 2008). In this study, a benefit of adopting healthy policies
and practices regarding food in the school setting would translate into healthier children with less obesity risk.

Perceived barriers, the fourth construct of the Health Belief Model, refers to the perceived impediments to adopting a new health behavior. For example, if a person feels that a new behavior will not fit comfortably into his or her lifestyle, this may prevent the adoption of the positive health behavior (Sharma & Romas, 2008). Perceived barriers referred to the perceived possible reasons that comprehensive policy or comprehensive nutrition education had not been implemented. Barriers often reported regarding the adoption of healthy policies and practices within schools have been identified as financial support, time constraints, parental support, and administrative support in that order (Bounds et al., 2008). Barriers reported by school food service directors most often are funding barriers (Raineville & Choi, 2003) and lack of support from key personnel such as administrators and teachers (McDonnell, Probart, Weirich, Hartman, & Nguyen, 2006).

The fifth construct is that of cues to action. A cue to action is something that motivates an individual to act and to adopt the healthy behavior. This stimulus may be internal or external. An example would be a commercial or other media reminder (Sharma & Romas, 2008). A cue to action for a school food service director would be the School Wellness Policy Mandate, which requires school food service involvement in policy and practice implementation in order to increase the likelihood of wellness for the nation’s school children (USDA: FNS, n.d.-a).

The last construct represented in the Health Belief Model is self-efficacy.
Self-efficacy was added to the model in the 1980s and was first represented in the Social Cognitive Theory (Sharma & Romas, 2008).

By identifying perceived benefits and barriers from the perspective of the public school district food service directors on the development of comprehensive nutrition policies and practices, training can be provided to assist in overcoming those barriers. Training can also provide additional education to emphasize the positive role that school food service directors can play in the prevention of disease. Although the Health Belief Model typically is used to explain the effect of health behaviors on an individual’s own health status. In this study it was utilized as a tool to assist in examining the way food service directors view their influence on the health status of the children that they influence on a daily basis.
CHAPTER III
RESEARCH METHODS AND PROCEDURES

Overview/ Purpose of the Study

The purpose of this study was to analyze the impact of demographic characteristics and perceived self-efficacy on the development and implementation of food related policies and practices in schools among district school food service directors.

Identification of the Subjects

“The goal of Ohio’s education system is for all students to graduate from high school with the knowledge and skills necessary to successfully continue their education, be workforce ready and participate in the global economy as productive citizens” (ODE, 2008, p. 1). In order to perform as productive citizens, students need to be healthy citizens. Food service directors in schools contribute to the health and overall well-being of students by providing balanced meals and by supporting the health education efforts of teachers in the classrooms. “If a school’s setting is intended to be a learning environment for children, the issue of healthful food choices needs to be a priority” (The American Dietetic Association, 2006, p. 125). The contribution of nutrition professionals in schools to the formation of healthy citizens is that they contribute to the prevention of chronic diseases and obesity (Jarratt & Mahaffie, 2007).

In addition to the overarching education goal, the Ohio Department of Education (ODE) has focused its activities on a three-fold aim: to raise expectations, to build capacity, and to improve results. In this context, educational expectations should be clear and attainable. Capacity is built through assistance from community, family, and
teachers who are equipped to help students achieve. Finally, academic results are improved through accountability from both teachers and students by way of measurement, publicity, and a reward system for those good results (ODE, 2008).

In addition to providing resources for schools in the state of Ohio, ODE serves as a storehouse of statistical data relating to public education. This information may be accessed via written request. In this context, a directory of Ohio public school district food service directors \( (N = 603) \) was obtained from the Ohio Department of Education (ODE, 2009, June). The subject pool for this study included all food service directors from the 613 Ohio public school districts. This group comprised the population of the study. Because of the small size of some of the districts, multiple districts may have been serviced by one district food service director during the time period of data collection in this study. In addition, some districts may not participate in the National School Lunch or School Breakfast Program. Because of this, the number of district public school food service directors from whom data were collected was smaller \( (N = 603) \) than the actual number of districts.

This study was conducted as a population study. A population study collects information from a given group of people for the purpose of planning, for the purpose of policy formulation, and to provide an understanding of current social conditions (Smith, 1960). Conducting research on an entire population eliminates the need to use inferential statistics and allows the researcher to gather information directly about the characteristics of the population rather than by assumption (Portney & Watkins, 2000). Statistics derived from samples require inference as the entire population is not examined.
Statistics derived from an entire population provides more power than those of a sample because inferences are not required (Gravetter & Wallnau, 1996). Populations can be of any size, but must contain one or more characteristics that are unique to the group (Fraenkel & Wallen, 2000). Use of the entire population, if possible, provides a unique advantage to the researcher.

Caution should be exercised about generalizing beyond the population being studied. An entire population is rarely available, however, and most researchers are required to use a sample extracted from the group of interest. The advantage of utilizing a sample is to save time, effort, and money. Capitalizing on this advantage often comes at the expense of generalizability, which a population study provides (Fraenkel & Wallen, 2000).

**Instrumentation**

A 4-page, 51-item instrument was developed to analyze district school food service directors’ perceptions of the nutrition policies and practices implemented in their respective school districts. These subscales were entitled “Policies” and “Practices.” In specific, this instrument contained items focused on district school food directors’ beliefs about barriers and benefits of comprehensive nutrition policy implementation and practice (Perceptions), questions that pertained to working with others (Collaboration), beliefs about their ability to carry out their job duties (Self-efficacy), and items regarding demographics (Demographics). Please refer to Appendix D.
Policies

Developed by CDC in partnership with school administrators and others, the School Health Index is a self-assessment tool that can be used by local schools to rate themselves in planning and programming in regards to health promotion. The School Health Index is a tool that assists by:

- enabling schools to identify strengths and weaknesses of health and safety policies and programs,
- enabling schools to develop an action plan for improving student health, which can be incorporated into the School Improvement Plan, and engaging teachers, parents, students, and the community in promoting health-enhancing behaviors and better health (NCCDPHP, 2006a, p. 1).

The first subscale of the instrument (items 1-7) was adapted from the nutrition items that are present on the School Health Index (NCCDPHP, 2006a). Items in this subscale focused on an evaluation of the food service policies that existed in the school district at the time that the instrument was received. In this particular subscale, there were questions requiring a 0 to 3 score in which respondents were asked to declare whether or not policies or practices were not in place (0) to fully in place (3) or somewhere in between/partially in place (1-2).

Practices

Like items that enabled subjects to reflect on analyzing school policy, the second subscale of the instrument (items 8-20) also was adapted from the School Health Index (NCCDPHP, 2006a) examined food practices within the district. This subscale used
items requiring a 0 to 3 score. Respondents were asked to declare whether or not policies or practices were not in place (0) to fully in place (3) or somewhere in between/partially in place (1-2).

**Collaboration**

The third subscale of the instrument was comprised of seven statements (items 21-27). This subscale utilized items requiring a 0 to 3 score in which respondents were asked to rate their opportunities to work with others in promoting healthy eating behaviors or their opportunities to obtain further training or education. A score of 0 meant that there were no opportunities for collaboration or further training, whereas a 3 meant that there were abundant opportunities for both. This subscale was also produced by extracting questions from the School Health Index (NCCDPHP, 2006a).

**Theoretical Underpinnings**

**District school food directors and self-efficacy.** The fourth subscale of the instrument (3 items) examined self-efficacy among subjects. The items pertained to the empowerment/self-efficacy perceived by the respondent in the implementation of nutrition policy and in nutrition practice within their school district. These items included exploration of the perceptions felt when facing a difficult task (item 28), belief in the fact that one can accomplish whatever they set their mind to (item 29), and confidence in performing effectively in the tasks given (item 30). The three items pertaining to the self-efficacy component were extracted from the eight-question New General Self-Efficacy instrument (Chen, Gully, & Eden, 2001).
A five point Likert scale was used to measure the level of respondents’ perceptions regarding their self-efficacy (items 28-30). “A Likert scale is a summative scale, most often used to assess attitudes or values” (Portney & Watkins, 2000, p. 299). In this particular study a score of “5” indicated that the respondent strongly disagreed with the statement. A response of “1” indicated that the respondent strongly agreed with the statement given. The middle score of “3” titled “unsure” was selected if the respondent was not familiar with the statement subject matter or with how they felt regarding the issue at hand.

**District school food service directors and the Health Belief Model.** Items regarding benefits and barriers (items 33, 34, and 39) reflected two constructs found in the Health Belief Model. The Health Belief Model is one of the oldest models utilized in health education practice (National Cancer Institution [NCI], 2005). Even though it is an old model, it continues to be one of the most widely used (Sharma & Romas, 2008). It includes a total of six constructs, three of which were utilized in this study. The six constructs include perceived susceptibility, perceived severity, perceived threat, perceived benefits, perceived barriers, cues to action, and self-efficacy (Sharma & Romas, 2008). Of the three utilized in the study, perceived benefits (one construct) involves the individual’s belief system regarding their behaviors and the resulting health risk(s) that they pose. Perceived barriers (a second construct) involves the individual’s belief system regarding the costs of taking action (material and psychological) in order to avoid a health threat. Last, selected items examined self-efficacy, which involves the confidence that one has in himself to take needed action in order to avoid a threatened
health problem (NCI, 2005). Bandura (1997) is credited with the Self-Efficacy theory, which examines individual’s belief in their ability to perform certain actions.

**Perceptions**

The fifth subscale of the instrument (9 items) allowed an opportunity for subjects to provide reflections about a variety of policies and practices that were implemented in the school district in which they are employed. Included were items regarding the provision of healthy foods (item 32), the practice of nutrition education in the classroom and in other areas of the school (items 31, 36), obesity prevention (items 27, 33), and comprehensive nutrition policies (items 33, 35). These items were measured using a Likert scale, which utilized the “Strongly Agree” response to the “Strongly Disagree” response. A score of 1 indicated strong agreement, whereas a score of 5 indicated strong disagreement. A score of 3 indicated that the respondent was “Undecided.” Two additional items in this subscale asked respondents about perceptions regarding the implementation and/or maintenance of comprehensive nutrition policies. These two items had answers, which were dichotomous and answered by a “yes” or “no” response. A third item asked the respondent to rank the reasons why implementation of comprehensive policies was difficult. Six choices were provided. These items were numbered from “most difficult” (1) to “least difficult” (6).

An additional item between the third and fourth subscales was a question pertaining to the involvement of the food service director in Wellness Policy activities. The respondent was asked to mark “Not involved,” “Somewhat involved,” or “Very involved” with an “x” on the line.
Demographics

The final subscale of the instrument (13 items) identified background and demographic characteristics among respondents, including their sex (item 41), age (item 42), qualifications, training, and certification (items 43-44). It also included items regarding number of years employed in the position (item 45), number of hours worked per week in the previous year (item 46), salary level (item 47), typology of school (item 48), involvement in a Wellness Committee (item 49), involvement in and type of nutrition education (item 50), and type of employment (item 51).

Psychometric Analysis of the Instrument

This instrument was tested for internal consistency and resulted in $\alpha$ values of .87, .88, and .85 (Chen et al., 2001), which indicated the extent to which the instrument was measuring particular defined characteristics and nothing else (Portney & Watkins, 2000). Reliability was measured and results were $r = .65, .66,$ and $ .62,$ indicating that the instrument is stable over time (Chen et al., 2001). The instrument was also tested for content validity and found to be consistent (Chen et al., 2001). After evaluation from two panels of students (undergraduate and graduate), the instrument was found to possess content validity. Content validity “refers to the adequacy with which this universe is sampled by a test” (Portney & Watkins, 2000, p. 83). The students in the study were given definitions of three constructs (general self-efficacy, self-esteem, and another construct similar to self-efficacy and self-esteem). The students were asked to place 35 randomly provided items into the given categories. Graduate students sorted 98% of the general self-efficacy items correctly, and undergraduate students sorted 87% correctly.
These results “provide evidence for discriminate and content validity” (Chen et al., 2001, p. 69). The New General Self Efficacy instrument consists of eight items and include statements such as “I will be able to achieve most of the goals that I have set for myself;” “when facing difficult tasks, I am certain that I will accomplish them;” “in general, I think that I can obtain outcomes that are important to me;” to name a few (Chen et al., 2001, p. 79). Permission to use the scale was obtained from Dr. Gilad Chen (see Appendix E).

The instrument was sent to six experts in the areas of health education, nutrition, and survey research to establish content validity. Content validity determines the degree to which an experiment or measurement actually reflects the variable it has been designed to measure. Content validity “refers to the adequacy with which this universe is sampled by a test” (Portney & Watkins, 2000, p. 83). Results indicated that very few respondents provided comments. However, one content expert, in particular, provided extensive suggestions. Recommendations tended to focus on ordering of the questions in addition to word choice usage and increased clarification of many of the questions utilized in the instrument.

To test for stability reliability, a pilot test was conducted. Results provided needed information to be used in the calculation of the instrument’s reliability. Reliability is “the extent to which a measurement is consistent and free from error” (Portney & Watkins, 2000, p. 61). Stability requires that several measurements be taken so that an instrument can be verified as reliable (Portney & Watkins, 2000).
This pilot test of the instrument was conducted on August 14, 2008, using a convenience sample of district school foodservice directors from school districts in Northeast Ohio and Western Pennsylvania. These food service directors were selected for participation in the pilot study because of their attendance at an annual regional workshop for continuing professional development sponsored by the Trumbull County Health Department. Pilot study subjects were approached during the lunch break of the meeting and provided the first copy of the instrument with a stamped, self-addressed, return envelope. They were also instructed that a follow-up instrument would be mailed in approximately one week (see Appendix F). Twenty-eight copies of the instrument were distributed to eligible attendees. Each copy of the instrument contained a cover page with a line where the respondents were to fill in the last four digits of their home phone numbers and an incentive of one dollar. A follow-up instrument was then matched by the phone numbers provided and one week later, the same instrument was mailed to the participants. Eleven matched pairs were obtained. A target of 30 matched pairs is desired to complete a test/retest analysis (Rea & Parker, 1992).

In order to increase the number of matched pairs in the pilot study, 32 additional surveys were mailed to a convenience sample of public school district food service directors employed in Northeast Ohio and Western Pennsylvania. Care was taken to ensure that none of those sampled were in the original pilot test on August 14, 2008. Thirty-two instruments were mailed. A second copy of the instrument was mailed to each prospective participant one week later. Of these, nine matched pairs were obtained. A total of 20 matched pairs resulted and the data were analyzed. Pearson Correlation
Analysis was used to test the instruments in order to estimate the relationship of the scores (Wiersma & Jurs, 2005). Test-retest reliability results were as follows:

- The 7 items pertaining to policies in the districts showed a strong positive correlation \( r = .71 \).
- The 13 items pertaining to practices in the districts showed a strong positive correlation \( r = .78 \).
- The 3 empowerment items showed a moderate to strong positive correlation \( r = .65 \).
- The 6 items pertaining to perceptions of the food service managers showed a moderate positive correlation \( r = .48 \).

Analysis of the responses on the 29 items revealed an instrument stability/reliability value of 0.70, indicating a strong positive correlation across all instrument items. Correlation refers to the “degree of association between two sets of data, or the consistency of position within the two distributions” (Portney & Watkins, 2000, p. 65). “The greater the absolute value of the coefficient, the stronger the relationship” (Wiersma & Jurs, 2005, p. 359). After the pilot test was conducted, 10 items were modified due to a low “r” value (less than .50). An “r” value less than .60 indicates that the relationship is less than strong and approaching only the “moderate” level (Levin & Fox, 2003, p. 320). In order to improve the instrument’s subscales, low “r” value questions (those with “r” less than .50) were reviewed with a practicing school food service district director with expertise in the subject matter. The practicing director was asked to provide suggestions.
The location and number of items that required revision included:

- One item in the first subscale (policies),
- Two items in the second subscale (practices),
- Two items in the third subscale (working with others),
- One item in the fourth subscale (self-efficacy),
- Four items in the fifth subscale (perceptions).

Many items were rephrased, seven items utilized a new word within the phrase that maintained the same meaning, and one item provided an example. For example, one statement read: “Policies in our school district prohibit using food as a reward or punishment.” This statement was changed to read: “Policies in our school district ban using food as a reward or punishment.” As such, these findings confirmed that this instrument can be used to assess the efficacy, policy implementation, practices, and perceptions of district school food service directors.

**Operationalizing the Variables**

In order to test the hypotheses of this study, the following variables were analyzed:

**Sex:** Measured as a nominal dichotomous variable two options in the response set were: (a) Male or (b) Female.

**Age:** Measured as a continuous variable, respondents wrote in their age.

**Qualifications:** Measured as an ordinal variable the four options given were: (a) an Associate’s degree in nutrition or management, (b) a Bachelor’s degree in a nutrition-related field, (c) a Master’s degree, or (d) None of the above.
Certifications: Measured as a nominal variable, the seven options given were: (a) certification/credentialing in food service from SNA (School Nutrition Association) or a state program that requires continuing education, (b) CDM (Certified Dietary Manager), (c) CFPP (Certified Food Protection Professional), (d) RD (Registered Dietitian), (e) Culinary Certificate, (f) LD (Licensed Dietitian), (g) None of the above.

Years of employment: Measured as an interval variable the five options given were: (a) 0-5 years, (b) 6-10 years, (c) 11-15 years, (d) 16-20 years, and (e) 21+ years.

Hours worked per week: Measured as a continuous variable the number of hours worked per week was a write-in question.

Salary level: Measured as an ordinal variable the five levels were: (a) Less than $10,000 per year, (b) $10,000 to $20,999 per year, (c) $21,000 to $39,999, (d) $40,000 to $59,999, or (e) $60,000 or more.

Type of school (setting): Measured as a nominal variable the three options given were: (a) Urban/City, (b) Suburban, or (c) Rural.

Participation on a school wellness committee: Measured as a nominal dichotomous variable the two options given were: (a) Yes or (b) No.

Type of nutrition activities performed: Measured as a nominal variable the seven options were: (a) Educational handouts, (b) Classroom programs, (c) Nutrition “theme” days in cafeteria, (d) Teacher/Staff education, (e) Parent education (f) None of the above, or (g) Other.

Type of employment: Measured as a nominal dichotomous variable the two choices were: (a) school or (b) contract management company.
Policies (seven items): Measured as an ordinal variable the options given were:
(a) Not in Place, (b) Under Development, (c) Partially in Place, or (d) Fully in Place.

Practices (13 items): Measured as an ordinal variable the options given were:
(a) Not in Place, (b) Under Development, (c) Partially in Place, or (d) Fully in Place.

Collaboration with others (seven items): Measured as an ordinal variable the options given were:
(a) Not in Place, (b) Under Development, (c) Partially in Place, or (d) Fully in Place.

Self-Efficacy (three items): Measured as an ordinal variable the options given were:
(a) Strongly Agree, (b) Agree, (c) Unsure, (d) Disagree, or (e) Strongly Disagree.

Perceptions (6 items): Measured as an ordinal variable the options given were:
(a) Strongly Agree, (b) Agree, (c) Unsure, (d) Disagree, (e) Strongly Disagree. The first two items related to the role of the food service director in providing sound nutrition/nutrition education to students. The second two questions pertained to policies and nutrition education as preventive of future disease and the last two pertained to the ease in implementation of nutrition education and policies.

Barriers to the implementation of comprehensive nutrition policies: Measured as a nominal dichotomous variable the options given were (a) Yes or (b) No. If the respondent answered No, they moved to item 38, which was measured as a nominal dichotomous variable the options given were: (a) Yes or (b) No. If yes, they moved to item 39 and answered why the implementation may be difficult. Measured as a nominal variable the options given as (a) I don’t have support of administration, (b) I don’t have
time, (c) I don’t have funds to do it, (d) I don’t have parental support, (e) I have a hard
time coordinating with teachers, or (f) I don’t have the skills/training.

Involvement with policy development: Measured as an ordinal variable the options
given were (a) Not involved, (b) Somewhat involved, and (c) Very involved.

Research Design/Data Collection Protocol

Subjects for the study were contacted by using a database of public school
districts provided by the Ohio Department of Education. The database of public schools
included the name and contact information of each public school district food service
director in the state of Ohio.

The data collection procedure and instrument preparation followed guidelines
developed by Dillman (2000). In accordance with the Dillman Tailored Design Method
(DTM), the instruments were sent using a wave mailing procedure and were printed in
booklet format (11 x 17 inches), which were light blue in color (Dillman, 2000). Kent
State University letterhead was used for the personalized, hand-signed cover letter. All
instruments were coded so that subjects did not receive unnecessary repeated mailings.
Responses were voluntary and confidential. The initial mailing included a hand-signed
personalized cover letter (Appendix F), an instrument, and a self-addressed stamped
return envelope. In addition, each instrument included a one-dollar bill for incentive
(Dillman, 2000; Price, Dake, Jordan, Silvestri, & Ward, 2006). After one week, a
thank-you/reminder card was sent the non-responders (Appendix F). Two weeks after
the reminder cards were sent, a second mailing including a replacement instrument was
forwarded to the non-responders. As with the first mailing, this mailing included a
Financial support for the study was provided by three scholarships. One award was granted by The American Dietetic Association Foundation (the Francis Carr Parker Scholarship). The others were awarded by Kent State University (the Florence Hellman Graduate Student Scholarship State and the Alice Elgin Fenn Outstanding Doctoral Student Award from the Health Education Program).

All returned instruments were kept in the locked office of the director of the dissertation. When data collection had been completed, all instruments were destroyed. The process was approved by the Human Subjects Review Board at both Kent State University on July 25, 2008, and Youngstown State University on August 8, 2008, with Kent State University receiving primary jurisdiction over the process (Appendix G). No data collection of any kind was begun prior to receiving full approval from both universities.

**Analysis of the Hypotheses**

Based on the research questions posed previously, this study analyzed the relationship between specific demographic variables and comprehensive food policy and practice in Ohio’s public schools. The null hypotheses were tested:

*Hypothesis 1.* There will be no statistically significant difference between district school food service directors who have lower educational attainment and those with higher educational attainment in the implementation of comprehensive school food
policy. Because there were two groups and one score was analyzed, the appropriate test was the independent t-test.

Hypothesis 2. There will be no statistically significant difference between district school food service directors who have lower educational attainment and those with higher educational attainment in the level of comprehensive nutrition practice. Because there were two groups and one score was analyzed, the appropriate test was the independent t-test.

Hypothesis 3. There will be no statistically significant difference between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition policy.

Hypothesis 4. There will be no statistically significant difference between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition practice.

Hypothesis 5. There will be no statistically significant difference between district school food service directors with low self-efficacy and those with high self-efficacy and difficulty in the implementation of comprehensive nutrition policy. Because two groups and one scale were analyzed, the appropriate test was the independent t-test.

Hypothesis 6. There will be no statistically significant difference between district school food service directors with low self-efficacy and those with high self-efficacy in the maintenance of comprehensive school food policy. Because two groups and one scale were analyzed, the appropriate test was the independent t-test.
Hypothesis 7. There will be no statistically significant difference between certified and non-certified district school food service directors in barrier identification regarding policy implementation. Because there were six variables and an analysis of the difference in the means was required, a frequency analysis was completed.

Hypothesis 8. There will be no statistically significant relationship between selected demographic variables and comprehensive school food policy. Sex, hours worked, school type, nutrition activity involvement, and employment type are all nominal data and there are five groups, the appropriate test was the one-way ANOVA. Age, years of employment, and salary level are interval data, and the appropriate test was a correlation. Qualifications, certification, and Wellness Committee involvement are ordinal data, and the appropriate test was a correlation.

Hypothesis 9. There will be no statistically significant relationship between district school food service directors regarding selected demographic variables and comprehensive nutrition practice. Sex, hours worked, school type, nutrition activity involvement, and employment type are all nominal data, and the appropriate test was the t-test. Age, years of employment, and salary level are interval data, and the appropriate test was a correlation. Qualifications, certification, and Wellness Committee involvement are ordinal data, and the appropriate test was a correlation.

Data was entered into the computer using the Statistical Package for Social Sciences (SPSS) for Windows package, version 15. Descriptive statistics were generated (frequencies, range of scores, means, and standard deviations) in order to describe the respondents regarding their demographics and other characteristics, level of
empowerment/self-efficacy, participation in recommended nutrition practices in schools, and level of involvement in policy implementation.

In order to test for differences between different combinations of groups, analysis of variance was conducted. Analysis of variance detects differences between many different group comparisons and reduces the chance of a type I error (Levin & Fox, 2003). T-tests were also conducted to establish whether or not there was a difference between the means of two groups (Levin & Fox, 2003). Correlations were also employed to test whether or not two variables possessed a relationship to one another and also the strength of that relationship (Levin & Fox, 2003).

Limitations

Several limitations existed in this study. Because of the self-report nature of this mailed survey, some data may have been over or under reported as compared to the true practice of policy implementation or comprehensive nutrition practice. This may have been due to a perceived pressure to respond to questions in a socially desirable way. If so, this would be a threat to the internal validity of the study. The monothematic nature of the questionnaire may have caused biased responses in that some respondents may have thought about and answered in a way different than what they might have had had they not been forced to think about the issue in a concentrated form (Dake, Price, Telljohann & Funk, 2004). If so, this too would have been a threat to the internal validity of the study.

To the extent that an important item may not have been included could be a threat to the internal validity of the findings. This population was selected to represent food
service directors in public school districts in the state of Ohio. Thus, the results of this study should not be generalized to those in other states. The delimitation of the study is that the survey was provided only to those district school food service directors employed by public schools or contracted by a management company to work in a public school district.
CHAPTER IV

RESULTS

Purpose of the Study

The purpose of this study was to analyze the impact of demographic characteristics and perceived self-efficacy on the development and implementation of food related policies and practices in schools among district school food service directors. The instrument that was used for data collection in this study was comprised of five subscales:

The Policy subscale consisted of 7 items and asked the subjects to rate the adoption of food-related policies in their schools. The response set on all items in this subscale was constructed to support the collection of ordinal data. As such, all items were measured on a Likert scale with response options ranging from “Not in Place” given a score of 0 to “Fully in Place” given a score of 3. The items were derived from the School Health Index (NCCDPHP, 2006b).

The Practice subscale consisted of 13 items adapted from the School Health Index (NCCDPHP, 2006b). All items were measured on an ordinal scale with higher scores being assigned by subjects to practices that were more fully in place. Lower scores were assigned by subjects to practices that were not in place.

The Collaboration subscale consisted of 7 items, the majority of which were adapted from the School Health Index (NCCDPHP, 2006a). All items were measured on an ordinal scale with higher numbers assigned to practices that were more fully in place. Lower scores were assigned to practices that were not in place as reported by subjects.
Three items comprised the Self-Efficacy subscale. The items, measured as interval data, were derived from the New General Self Efficacy Scale (Chen et al., 2001). The items were measured on a Likert scale with higher numbers assigned to practices that were more fully in place. Lower scores were assigned to practices that were not in place.

Eight items comprised the Demographic and Background Information subscale that concluded the instrument. These items were measured on a variety of scales. Four items were measured on a nominal scale (sex, certification, school type, and employment type), two items was measured on an ordinal scale (age, qualification/degree), two items were measured on an interval scale (years of employment, salary), and one item asked respondents to mark which nutrition education activities they perform by checking all that applied.

Data Collection

Instrument Management

Kent State University and Youngstown State University Human Subjects Review Boards approved the study after the appropriate Internal Review Board (IRB) forms were completed. Once approval was received, the Ohio Department of Education provided a contact list of all public school district food service directors in the state. This contact list, provided through email, included the school district name and address and the name and email address of the food service director. From this list, a mail merge was constructed, and university envelopes were printed with the name of the district food service director, school district, and address of the school.
Consistent with the Dillman Protocol, each respondent received an initial mailing packet containing a cover letter, the instrument, and a stamped return envelope. This packet was sent to the subjects in September of 2009 (see Table 1). After this first mailing, 256 responses were received. Approximately one week later, a reminder postcard was sent to subjects who had not responded to the initial mailing. The second contact resulted in 47 additional responses. Two weeks after the reminder postcard, a third mailing containing a cover letter, instrument, and stamped return envelope was sent to all subjects who had not responded to the first or second mailing (Dillman, 2000). After the third mailing, 61 responses were received resulting in a total response rate of 364.

Table 1

<table>
<thead>
<tr>
<th>Mailing Schedule</th>
<th>Date</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial mailing</td>
<td>September 30, 2009</td>
<td>256</td>
</tr>
<tr>
<td>Postcard/thank you</td>
<td>October 8, 2009</td>
<td>47</td>
</tr>
<tr>
<td>Third mailing</td>
<td>October 29, 2009</td>
<td>61</td>
</tr>
<tr>
<td>Response cut off</td>
<td>November 14, 2009</td>
<td>T= 364</td>
</tr>
</tbody>
</table>

Description of the Population

As discussed previously, a list of 613 potential subjects, their school affiliations, and their addresses was provided by the Ohio Department of Education. From this comprehensive list, four respondents were eliminated because they were employed by
local educational service centers and not by public school districts. Six other potential subjects were eliminated from participation. In these cases, either the district food service director was assigned to cover more than one school district or the school district in which they were employed did not participate in the school lunch and/or breakfast programs, a prerequisite for participation in this study. As such, the list of potential subjects representing school districts was reduced by 10 to a total of 603.

The instrument was mailed to the 603 subjects during the 2009-2010 school year. During the mailing process, two instruments were returned after having been identified as “undeliverable.” This reduced the final list of potential subjects to 601. Fifteen potential subjects returned the instrument and did not respond to any included items. Curiously, one of those 15 instruments was returned stating that there was no food service director in that district.

At the conclusion of the mailing process, the total population for the study was 601 potential subjects. After three contacts with the subjects, a total of 364 responses were received within the designated data collection time period. This represents a response rate for the study of approximately 61% of the population. Response rates for this study are shown in Table 2. The results are consistent with the work of Dillman (2000) confirming that expected response rates can range from 58%-92%.
Table 2

Response Rates

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Population Size (N)</th>
<th>Actual Responses (N)</th>
<th>Response Rate of Total Population %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>601</td>
<td>364</td>
<td>60.6%</td>
</tr>
</tbody>
</table>

Descriptive Statistics

Selected Demographics Summary

The majority of district school food service directors in this study were female (84.1%). Men accounted for slightly more than 15% of the total of respondents. Two respondents did not provide an answer to this item. They were coded as missing data. See Table 3.

Respondents in this study were asked to provide their age in years. This was an open-ended question in which the respondents were asked to write in their age on the line provided. The mean age of the subjects in this study was 51.43 years, whereas the median age was 52 years. Fifteen respondents chose not to answer this question. The range of ages of the district school food service directors in this study was 23 to 72. See Table 3.

The majority of the district school food service directors reported having no post secondary degree (64.6%). Of those who held a degree beyond high school, most (17.9%) reported having a bachelor’s degree. The second most commonly held degree
Table 3

**Demographic Characteristics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Count (N)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong> (N = 362)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>56</td>
<td>15.4%</td>
</tr>
<tr>
<td>Female</td>
<td>306</td>
<td>84.1%</td>
</tr>
<tr>
<td><strong>Age (N = 349) in years</strong></td>
<td>Mean = 51.43; Range = 23-72</td>
<td></td>
</tr>
<tr>
<td><strong>Degree Status (N = 363)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate</td>
<td>37</td>
<td>10.2%</td>
</tr>
<tr>
<td>Bachelor</td>
<td>65</td>
<td>17.9%</td>
</tr>
<tr>
<td>Master</td>
<td>26</td>
<td>7.1%</td>
</tr>
<tr>
<td>None</td>
<td>235</td>
<td>64.6%</td>
</tr>
<tr>
<td><strong>Certification Type (N = 363)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNA (ASFSA)</td>
<td>139</td>
<td>38.2%</td>
</tr>
<tr>
<td>CDM</td>
<td>18</td>
<td>4.9%</td>
</tr>
<tr>
<td>CFPP</td>
<td>25</td>
<td>6.9%</td>
</tr>
<tr>
<td>RD</td>
<td>22</td>
<td>6.0%</td>
</tr>
<tr>
<td>LD</td>
<td>19</td>
<td>5.2%</td>
</tr>
<tr>
<td>Culinary Certificate</td>
<td>12</td>
<td>3.3%</td>
</tr>
<tr>
<td>None</td>
<td>158</td>
<td>43.4%</td>
</tr>
<tr>
<td><strong>Employment Length (N = 359)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 years</td>
<td>115</td>
<td>31.6%</td>
</tr>
<tr>
<td>6-10 years</td>
<td>70</td>
<td>19.2%</td>
</tr>
<tr>
<td>11-15 years</td>
<td>56</td>
<td>15.4%</td>
</tr>
<tr>
<td>16-20 years</td>
<td>46</td>
<td>12.6%</td>
</tr>
<tr>
<td>20+ years</td>
<td>72</td>
<td>19.8%</td>
</tr>
<tr>
<td><strong>Salary (N = 344)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10,000</td>
<td>19</td>
<td>5.2%</td>
</tr>
<tr>
<td>10,000-20,999</td>
<td>34</td>
<td>9.3%</td>
</tr>
<tr>
<td>21,000-39,999</td>
<td>164</td>
<td>45.1%</td>
</tr>
<tr>
<td>40,000-59,999</td>
<td>70</td>
<td>19.2%</td>
</tr>
<tr>
<td>60,000+</td>
<td>57</td>
<td>15.7%</td>
</tr>
<tr>
<td><strong>School Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban/City</td>
<td>74</td>
<td>20.3%</td>
</tr>
<tr>
<td>Suburban</td>
<td>80</td>
<td>22.0%</td>
</tr>
<tr>
<td>Rural</td>
<td>195</td>
<td>53.6%</td>
</tr>
<tr>
<td><strong>School Wellness Participation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>281</td>
<td>77.2%</td>
</tr>
<tr>
<td>No</td>
<td>46</td>
<td>12.8%</td>
</tr>
<tr>
<td>School does not have</td>
<td>29</td>
<td>8.0%</td>
</tr>
<tr>
<td><strong>Employment Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>333</td>
<td>91.5%</td>
</tr>
<tr>
<td>Contract Company</td>
<td>22</td>
<td>6.0%</td>
</tr>
</tbody>
</table>
was an associate’s degree (10.2%). Very few respondents reported having completed a master’s degree (7.1%). See Table 3.

The information in Table 3 reveals that most Ohio public school district food service directors in this study held no certification. Of the certifications examined, most who did possess a credential were certified through the School Nutrition Association (38.2%). This is consistent with results reported in the October 2006 issue of the *Journal of School Health* (O’Toole et al., 2007).

In 2003, the *Journal of the American Dietetic Association* published a joint position paper with the Society for Nutrition Education and the American School Food Service Association (now the School Nutrition Association) regarding nutrition services in schools. This document highlighted both the importance of addressing child nutrition issues in schools and the need for policy to guide credentialed professionals in the provision of services in addressing those needs. Credentialed professionals were defined as those who “should have a minimum of a bachelor’s degree in a nutrition-related field/foodservice from either the ASFSA or a state program” (ADA, 2003, p. 509). Both RD (Registered Dietitian) and LD (Licensed Dietitian) certification require a bachelor’s degree. CDM (Certified Dietary Manager) and CFPP (Certified Food Protection Professional) both require passing a national exam covering competencies in food service and nutrition (Dietary Managers Association, 1998-2009). Culinary training varies. Table 3 highlights the credentials of the district school food service directors in this study.
Among subjects in this study, most reported having worked less than six years as school food service directors (31.6%). The second length of employment reported most often by respondents in this study was 20 or more years (19.8%). Those with 11 to 15 years’ school food service experience constituted 15.4% of those surveyed. Very few respondents reported 16 to 20 years of experience (12.6%). See Table 3.

Most district food service directors in the population reported earning between $21,000 and $39,999 per year (45.1%). Very few food service directors in the study reported earning less than $10,000 per year (5.2%). Those district food service directors earning $40,000 to $59,999 per year constituted 19.2% (N = 70). There were 57 directors (15.7%) who reported earning $60,000 or more per year. Twenty respondents did not report their salary levels. They were coded as missing data. See Table 3.

Over half of all district school food service directors in this study (53.6%) reported being employed by a rural public school. Almost one-fourth of the respondents (22%) reported being employed by a suburban school. The fewest respondents (20.3%) stated that they worked for an urban/city school. These figures closely represent the actual distribution of public school categories/types in the state of Ohio. The categorization of schools (typology) is available on the Ohio Department of Education website (ODE, 2009). Fifteen respondents did not report their school type. They were coded as missing data. See Table 3.

Over three-fourths of the respondents reported that they belonged to the wellness committee in their school district (77.2%). The fewest respondents (12.5%) reported not being on their school’s wellness committee. Interestingly, in violation of the federally
mandated School Wellness Policy Mandate, 29 respondents (8%) stated that their school
did not have a wellness committee. It is required that school food service supply a
representative from their department to be present on the wellness committee (USDA:
FNS, n.d.-a). Nine subjects did not report their involvement with their school’s wellness
committee. These non-responses were coded as missing data (USDA: FNS, n.d.-b). See
Table 3.

Nearly all respondents (91.5%) reported that they were employed directly by the
public school district for which they worked. Very few (6%) reported being employed by
a contracted food service company. Nine subjects did not respond to this item. They
were coded as missing data. A summary table of the demographic item is presented in
Table 3.

Policy

Seven items comprised the policy subscale of the instrument. Statements
regarding nutrition policy were adapted from items found in the School Health Index
(NCCDPHP, 2006a) assessment instrument. Each item received an individual score.
Scores ranged from “0” for policies that were “Not in Place” to a score of 3 for policies
that were “Fully in Place.” These items then were combined to form one construct
entitled “Policy.” All combined item scores formed one total score for that category (the
composite score). The composite score had a minimum score of 0 and a maximum score
of 21. The composite score was used in the various analyses. The Policy construct was
used for the analyses of Hypotheses 1, 3, 5, 6, 7, and 8. Table 4 represents descriptive
statistics for the composite score of policy.
Table 4

**Policy Subscale**

<table>
<thead>
<tr>
<th>Policy</th>
<th>$N$</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Menu</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Score</td>
<td>363</td>
<td>0</td>
<td>21</td>
<td>14.02</td>
<td>4.063</td>
</tr>
</tbody>
</table>

**Practice**

Thirteen items comprised the practice subscale of the instrument. Statements regarding nutrition practices were adapted from each module in the School Health Index (NCCDPHP, 2006a) assessment instrument and combined to form one construct entitled “Practice.” Each item in the practice construct received a score. Scores ranged from “0” for practices that were “Not in Place” to a score of 3 for policies that were “Fully in Place.” All 13 scores were then combined to form one overall score that represented Practice. This total score was referred to as a composite score. This composite score had a minimum score of 0 and a maximum score of 21. Analyses for Hypotheses 3 and 9 were conducted utilizing the composite score for Practice. Descriptive statistics regarding the composite scores of Practice are shown in Table 5.
Table 5

*Practice Subscale*

<table>
<thead>
<tr>
<th>Policy</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Menu</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite</td>
<td>364</td>
<td>16</td>
<td>39</td>
<td>33.26</td>
<td>4.018</td>
</tr>
</tbody>
</table>

**Collaboration**

Seven items comprised the collaboration subscale of the instrument. Most of these items were adapted from the School Health Index (NCCDPHP, 2006a). Each item received its own score. Scores ranged from “0” for practices that were “Not in Place” to a score of 3 for policies that were “Fully in Place.” The items were then totaled and provided one grand score known as the composite score. The composite score had a minimum score of 0 and a maximum score of 21. This composite score represented the construct of Collaboration. Analyses were conducted utilizing the composite score.

Descriptive statistics for Collaboration can be seen in Table 6.

Table 6

*Collaboration Subscale*

<table>
<thead>
<tr>
<th>Policy</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Menu</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite</td>
<td>363</td>
<td>0</td>
<td>21</td>
<td>9.85</td>
<td>4.959</td>
</tr>
</tbody>
</table>
Self-Efficacy

Three items comprised the self-efficacy subscale of the instrument. Items were adapted from the New General Self Efficacy Instrument (Chen et al., 2001). Each item received a score measured on a Likert scale ranging from a score of “1” for statements with which respondents strongly agreed to a score of “5” for statements with which respondents strongly disagreed. Scores from the individual items were then totaled to form a composite score representing the construct of self-efficacy. Possible scores ranged from a minimum of 3 to a maximum of 15. Descriptive statistics for Self-Efficacy are shown in Table 7.

Table 7

<table>
<thead>
<tr>
<th>Policy</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Menu</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Score</td>
<td>362</td>
<td>3</td>
<td>15</td>
<td>4.26</td>
<td>1.652</td>
</tr>
</tbody>
</table>

Data Analysis

Hypothesis One

Null Hypothesis: There will be no statistically significant difference between district school food service directors who have lower educational attainment and those with higher educational attainment in the implementation of comprehensive school food policy.
The hypothesis was measured using an independent samples t-test. Findings from this analysis revealed that there was no statistically significant difference in the reporting of comprehensive school nutrition policy among subjects who held an advanced degree and those who did not hold a post secondary degree. As such, the null hypothesis was accepted. This confirms that there is no relationship between the presence of a degree on the part of a district school food service director and the reporting of comprehensive nutrition policy within that school district. Results are shown in Table 8.

Table 8

*Independent-Samples T-Test for Degree and the Presence of Comprehensive Nutrition Policy*

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Total</td>
<td>-1.378</td>
<td>360</td>
<td>.169</td>
</tr>
</tbody>
</table>

**Hypothesis Two**

Null Hypothesis: There will be no statistically significant difference between district school food service directors who have lower educational attainment and those with higher educational attainment in the level of comprehensive nutrition practice.

The hypothesis was measured using an independent samples t-test. Findings from this analysis revealed that there was no statistically significantly difference in the reporting of comprehensive school food practice in subjects who hold a degree and in those who do not hold a degree. As such, the null hypothesis was accepted. This
confirms that Ohio public school districts in this study in which the district director held a degree were no more likely to report comprehensive nutrition practices than Ohio public school districts in which the district school food service director did not hold a degree. Results are shown in Table 9.

Table 9

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Total</td>
<td>-1.378</td>
<td>360</td>
<td>.169</td>
</tr>
</tbody>
</table>

**Hypothesis Three**

Null Hypothesis: There will be no statistically significant difference between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition policy.

The difference between public school district food service directors with certification and those without certification and the presence of comprehensive school nutrition policy was analyzed using an independent samples t-test. Findings from this analysis revealed that there was a statistically significant difference in the reporting of comprehensive school nutrition policy if the district food service director held certification and the district food service directors who did not hold certification. As such, the null hypothesis was rejected. This confirms that there is a relationship between
certification on the part of a district school food service director and the reporting of comprehensive nutrition policy within the school. Results are shown in Table 10.

Table 10

*Independent-Samples T-Test for Certification and the Presence of Comprehensive Nutrition Policy*

<table>
<thead>
<tr>
<th></th>
<th>$t$</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy Total</strong></td>
<td>2.624</td>
<td>360</td>
<td>.009</td>
</tr>
</tbody>
</table>

**Hypothesis Four**

Null Hypothesis: There will be no statistically significant difference between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition practice.

The difference between public school district food service directors with certification and those without certification and the presence of comprehensive school nutrition practice was analyzed using an independent samples t-test. Findings from this analysis revealed that there was a statistically significant difference in the reporting of comprehensive school nutrition practice if the district food service director held certification and the district food service directors who did not hold certification. As such, the null hypothesis was rejected. This confirms that there is a relationship between certification on the part of a district school food service director and the reporting of comprehensive nutrition practice within the school. Results are shown in Table 11.
Table 11

*Independent-Samples T-Test for Certification and the Presence of Comprehensive Nutrition Practice*

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Total</td>
<td>3.2444</td>
<td>361</td>
<td>.001**</td>
</tr>
</tbody>
</table>

*Note.** **p < .01

**Hypothesis Five**

Null Hypothesis: There will be no statistically significant difference between district school food service directors in perceived self-efficacy and the implementation of comprehensive school food policy. Subjects with different degrees of self-efficacy were asked to report whether they had difficulty in implementing comprehensive school food policy.

The means of the two groups were analyzed using the independent samples t-test. Means between the two groups were significantly different (p < .05). Results indicated that district school food service directors with higher self-efficacy reported more difficulty in implementing school food policy. Conversely, those with lower self-efficacy reported less difficulty in the implementation of school food policy. As such, the null hypothesis was rejected. These results demonstrate that district school food service directors in this study with high levels of self-efficacy reported more difficulty with the implementation of school food policy. These results were not expected. Results are shown in Table 12.
Table 12

*Independent-Sample T-Test for Self-Efficacy and Difficulty in the Implementation of Comprehensive School Food Policy*

<table>
<thead>
<tr>
<th>Self Efficacy</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Sig.-(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4.52</td>
<td>1.732</td>
<td>172</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3.99</td>
<td>6.372</td>
<td>168</td>
<td>.003**</td>
</tr>
</tbody>
</table>

*Note. ** p < .01*

**Hypothesis Six**

Null Hypothesis: There will be no statistically significant difference between district school food service directors in perceived self-efficacy and the maintenance of comprehensive school food policy.

The two means were analyzed using the independent samples t-test. Significant differences between the means were noted. As such, the null hypothesis was rejected. As in implementation of comprehensive school food policy, subjects with lower self-efficacy scores reported less difficulty in maintaining comprehensive school food policy. Please refer to Table 13. Again, this result was not expected.
Table 13

**Independent-Sample T-Test for Self-Efficacy and Difficulty in the Maintenance of Comprehensive School Food Policy**

<table>
<thead>
<tr>
<th>Self Efficacy</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Sig.- (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4.49</td>
<td>1.564</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3.98</td>
<td>1.636</td>
<td>125</td>
<td>.022*</td>
</tr>
</tbody>
</table>

*Note.* *p* < .05

Fewer people responded to the maintenance item (*N* = 219) than responded to the implementation question (*N* = 340). This was due to the instrument instructions to skip the item regarding maintenance of comprehensive policy if answering “Yes” that it was difficult to implement comprehensive nutrition policies. The subjects answering “Yes” were then asked to identify in rank order the primary reasons that they had encountered difficulty in the implementation of comprehensive school nutrition policy on a following item. This information is displayed in Table 14.

**Hypothesis Seven**

Null Hypothesis: There will be no statistically significant difference between barrier identification by food service directors regarding policy implementation. Because there were six variables and an analysis of the difference in the means was required, a frequency analysis was completed. All subjects answered the question regarding difficulties in policy implementation even though only those who identified it to be a problem in a previous question (*N* = 340) were instructed to do so. Subjects were
Table 14

Identified Reasons for Difficulty in Policy Implementation

<table>
<thead>
<tr>
<th>Reasons listed most frequently by subjects (N = 364)</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of funds</td>
<td>84</td>
<td>23.0</td>
</tr>
<tr>
<td>Lack of time</td>
<td>53</td>
<td>14.6</td>
</tr>
<tr>
<td>Difficulty collaborating with teaching staff</td>
<td>35</td>
<td>9.6</td>
</tr>
<tr>
<td>Lack of administration support</td>
<td>33</td>
<td>9.1</td>
</tr>
<tr>
<td>Lack of parent support</td>
<td>20</td>
<td>5.5</td>
</tr>
<tr>
<td>Lack of skills</td>
<td>17</td>
<td>4.7</td>
</tr>
</tbody>
</table>

asked to rank in order from 1 (greatest difficulty) to 6 (least difficulty) those conditions that made policy implementation difficult. Table 14 shows those reasons with the reason listed most frequently listed first and the reason listed least frequently last. Lack of funds was listed most frequently by subjects (N = 84, 23%), whereas lack of time was listed as the next most common barrier by (N = 53, 14.6%). This was followed by difficulty in collaborating with teaching staff (N = 35, 9.6%) respondents. The reason listed less often by subjects (N = 33, 9.1%) was that of lack of administration support. This was followed by lack of support by parents (N = 20, 5.5%) as the next most common reason for difficulty in policy implementation. Surprisingly, the reason listed least often by subjects was that of a poor skill set (N = 17, 4.7%). The null hypothesis was rejected. Clearly, the greatest challenge for district food service directors and policy implementation was with funding. District school food service directors in the state of Ohio (employed in
public schools) in this study were also very confident in their abilities regarding policy implementation.

**Hypothesis Eight**

Null Hypothesis: There will be no statistically significant relationship between selected demographic variables and comprehensive school food policy. Sex, nutrition activity involvement, and employment type are all nominal data and the appropriate test was a t-test. School type and years of employment are all nominal data and there were three or more groups to compare; therefore, the appropriate test was the one-way ANOVA. Age was measured as ordinal data, and the appropriate test was a correlation.

**Sex.** Subject scores in comprehensive nutrition policy were compared based on gender utilizing an independent samples t-test. Results indicated that there is a significant difference in mean scores. Groups, however, were not evenly distributed with male subjects ($N = 56$) fewer than female subjects ($N = 305$). The null hypothesis was rejected. These findings indicated that schools in which men are the district school food service director are more likely to have comprehensive nutrition policy. Results are indicated in Table 15.

**School type.** One-way analysis of variance (ANOVA) was conducted between different school types (urban/city, suburban, and rural) and comprehensive nutrition policy. There was no significant difference between the school types. The null hypothesis was accepted. Results indicate that there is no significant difference between school type and comprehensive nutrition policy. Type of school does not determine the
likelihood of the presence of comprehensive school nutrition policy in Ohio public schools in this study. Findings are shown in Table 16.

Table 15

*Independent-Samples T-Test for Sex and Comprehensive School Food Policy*

<table>
<thead>
<tr>
<th>Sex</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>15.16</td>
<td>3.463</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>13.82</td>
<td>4.147</td>
<td>305</td>
<td>.024*</td>
</tr>
</tbody>
</table>

*Note. *p < .05

Table 16

*One-Way Analysis of Variance for Comprehensive Nutrition Policy and School Type*

<table>
<thead>
<tr>
<th></th>
<th>ss</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy T</td>
<td>5.44</td>
<td>2</td>
<td>2.72</td>
<td>.168</td>
<td>.845</td>
</tr>
</tbody>
</table>

**Nutrition activity involvement.** District school food service directors were asked to indicate their involvement in different types of nutrition education activities. These activities were assessed using a total score assigned to the different items. Item scores were then totaled. An independent samples t-test was utilized to assess differences between those district food service directors with certification and those district food service directors without certification and their total nutrition activity involvement score.
Those with higher scores are more actively involved in the process of nutrition education. Results indicate that there is a significant difference between the groups. Those with a higher score in nutrition education total score were more likely to be certified than those who did not have certification ($M = 1.95$ vs. $M = 1.37$). The null hypothesis was rejected. Ohio public school district food service directors who have some type of certification are more likely to be involved in nutrition education than those without certification. Table 17 provides the t-test results for equality of means.

Table 17

*Independent-Samples T-Test for Certification and Nutrition Education*

<table>
<thead>
<tr>
<th>Certification</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1.95</td>
<td>1.353</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3.98</td>
<td>1.248</td>
<td>158</td>
<td>.000***</td>
</tr>
</tbody>
</table>

*Note.*** $p < .001

*Employment type.* An independent samples t-test was conducted in order to determine if there were any differences in comprehensive policy implementation between subjects employed by schools or those employed by contracted companies. Results indicate that there was no statistically significant difference between the groups. Therefore, the null hypothesis was accepted. It should be noted that the groups were unbalanced with 22 subjects employed by a contracted company and 332 employed directly by the school. This inequality may have affected the results of the analysis.
Findings indicate that a district director employed by the school is just as likely as a district director employed by a contract company to be employed by a school in which comprehensive nutrition policies are present. These results are limited to the state of Ohio. Results are shown in Table 18.

Table 18

*Independent Samples T Test for Employment Type and Comprehensive Nutrition Policy*

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment Type</td>
<td>-.889</td>
<td>352</td>
<td>.375</td>
</tr>
</tbody>
</table>

**Age.** Respondents were asked to write in their age on the instrument. Age, therefore, in this instance is a continuous variable. As such, a Pearson correlation was conducted in order to test the relationship between age and comprehensive nutrition policy. Results indicate that there was no significant relationship between the two. The null hypothesis was accepted. Age of the district school food service director is not related to the presence of comprehensive school nutrition policy in Ohio public schools in this study. Results are shown in Table 19.

**Years of employment (experience).** One-way analysis of variance (ANOVA) was conducted to determine if there was a difference in means between five different categories of employment length and comprehensive nutrition policy. Results indicated
Pearson Correlation Testing the Relationship Between Age and Comprehensive School Nutrition Policy

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy T</td>
<td>(N = 348)</td>
</tr>
<tr>
<td></td>
<td>.053</td>
</tr>
</tbody>
</table>

that there were no significant differences in the mean scores between any of the groups. Therefore, the null hypothesis was accepted. Results indicate that the presence of comprehensive nutrition policy is not influenced by the experience (years of employment) of the district food service director in Ohio public schools in this study. Results are shown in Table 20.

Table 20

One-Way Analysis of Variance for Comprehensive Nutrition Policy and Length of Employment

<table>
<thead>
<tr>
<th></th>
<th>ss</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy T</td>
<td>53.161</td>
<td>4</td>
<td>13.290</td>
<td>.795</td>
<td>.529</td>
</tr>
</tbody>
</table>
Hypothesis Nine

Null Hypothesis: There will be no statistically significant relationship between district school food service directors regarding selected demographic variables and comprehensive nutrition practice. Sex and employment type are all nominal data, and the appropriate test was the t-test. School type and years of employment required comparing three groups and the appropriate test was a one-way ANOVA. Age was measured as continuous data and the appropriate test was a correlation.

**Sex.** Subject scores in comprehensive nutrition practice were compared based on sex utilizing an independent samples t-test. Results indicated that there was no significant difference in mean scores. Groups were not evenly distributed with male subjects \((N = 56)\) fewer than female subjects \((N = 306)\). The null hypothesis was accepted. These findings indicated that schools in which men are the district school food service director are no more likely to have comprehensive nutrition practice than those that employ females as district school food service directors. Results are indicated in Table 21.

Table 21

*Independent-Samples T-Test for Sex and Comprehensive School Food Practice*

<table>
<thead>
<tr>
<th>Sex</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>32.73</td>
<td>4.507</td>
<td>306</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>33.37</td>
<td>3.934</td>
<td>56</td>
<td>.602</td>
</tr>
</tbody>
</table>
School type. One-way analysis of variance (ANOVA) was conducted between different school types (urban/city, suburban, and rural) and comprehensive nutrition practice. ANOVA was used because there were three groups to compare. Results indicate that there is no significant difference between school type and comprehensive nutrition practice. The null hypothesis was accepted. Type of school does not determine the likelihood of the reporting of comprehensive school nutrition practice in Ohio public schools in this study. Findings are shown in Table 22.

Table 22

*One-Way Analysis of Variance for Comprehensive Nutrition Practice and School Type*

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice T</td>
<td>59.964</td>
<td>2</td>
<td>29.982</td>
<td>1.887</td>
<td>.153</td>
</tr>
</tbody>
</table>

Employment type. An independent samples t-test was conducted in order to determine if there were any differences in comprehensive nutrition practice between subjects employed by schools or those employed by contracted companies. An independent samples t-test was conducted because two groups were compared. Results indicate that there was a statistically significant difference between the groups. Those employed by a contracted company were more likely to report comprehensive nutrition practice. Therefore, the null hypothesis was rejected. It should be noted that the groups were unbalanced with 22 subjects employed by a contracted company and 332 employed directly by the school. Please see Table 23.
Table 23

*Independent Samples T-Test for Employment Type and Comprehensive Nutrition Practice*

<table>
<thead>
<tr>
<th>Employment Type</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3.015</td>
<td>353</td>
<td>.003**</td>
</tr>
</tbody>
</table>

*Note.** **p < .01

**Age.** Respondents were asked to write in their age on the instrument. Age, therefore, in this instance, is a continuous variable. As such, a Pearson correlation was conducted in order to test the relationship between age and comprehensive nutrition practice. Results indicate that there was no significant relationship between the two. The null hypothesis is accepted. Age of the district school food service director is not related to the presence of comprehensive school nutrition practice in Ohio public schools in this study. Results are shown in Table 24.

**Years of employment (experience).** One-way analysis of variance (ANOVA) was conducted to determine if there was a difference in means between five different categories of employment length of district school food service directors in Ohio public schools and comprehensive nutrition practice. Results indicated that there were no significant differences in the mean scores between any of the groups. Therefore, the null hypothesis was accepted. Results indicate that the reporting of comprehensive nutrition
practice is not influenced by the experience (years of employment) of the district food service director in Ohio public schools. Results are shown in Table 25.

Table 25

One-Way Analysis of Variance for Comprehensive Nutrition Practice and Length of Employment

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice T</td>
<td>122.293</td>
<td>4</td>
<td>30.573</td>
<td>1.900</td>
<td>.110</td>
</tr>
</tbody>
</table>

Summary

In this chapter, nine hypotheses were statistically analyzed. Independent samples t-test, One-Way Analysis of Variance, and Correlation were used to obtain results. Findings are summarized below.
Hypothesis One

Null Hypothesis: No statistically significant difference existed between district school food service directors who have lower educational attainment and those with higher educational attainment in the implementation of comprehensive school food policy. No statistically significant results were obtained. The null hypothesis was accepted.

Hypothesis Two

Null Hypothesis: No statistically significant difference existed between district school food service directors who have lower educational attainment and those with higher educational attainment in the level of comprehensive nutrition practice. No statistically significant results were obtained. The null hypothesis was accepted.

Hypothesis Three

Null Hypothesis: No statistically significant difference existed between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition policy. A statistically significant difference did exist between district school food service directors who held certification and those who did not hold certification and the implementation of comprehensive school nutrition policy. Those with certification were more likely to work in schools in which comprehensive nutrition policies were in place. The null hypothesis was rejected.
**Hypothesis Four**

Null Hypothesis: No statistically significant difference existed between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition practice. A statistically significant difference did exist between district school food service directors who held certification and those who did not hold certification and the implementation of comprehensive school nutrition practice. Those with certification were more likely to work in schools in which comprehensive nutrition practice was in place. The null hypothesis was rejected.

**Hypothesis Five**

Null Hypothesis: No statistically significant difference existed between district school food service directors in perceived self-efficacy and the implementation of comprehensive school food policy. Results indicated that district school food service directors with higher self-efficacy reported more difficulty in implementing school food policy. The null hypothesis was rejected.

**Hypothesis Six**

Null Hypothesis: No statistically significant difference existed between district school food service directors in perceived self-efficacy and the maintenance of comprehensive school food policy. As in implementation of comprehensive school food policy, subjects with lower self-efficacy scores reported less difficulty in maintaining comprehensive school food policy. The null hypothesis was rejected.
**Hypothesis Seven**

Null Hypothesis: No statistically significant difference existed between barrier identification by district school food service directors in regards to policy implementation. Lack of funds was listed most frequently by subjects ($N = 84, 23\%$). The reason listed least often by subjects was that of a poor skill set ($N = 17, 4.7\%$). There was a difference in barriers identified by district school food service directors in this study. The null hypothesis was rejected.

**Hypothesis Eight**

Null Hypothesis: No statistically significant difference existed between selected demographic variables and comprehensive school food policy. A statistically significant difference existed between sexes. These findings indicated that men who are employed as the district school food service director are more likely to report comprehensive nutrition policy. The null hypothesis was rejected. No statistically significant difference was found between school type and comprehensive school nutrition policy. The null hypothesis was accepted.

A statistically significant difference existed between those with certification and those without certification in nutrition education activities. Those with a higher score in nutrition education were more likely to be certified than those who did not have certification ($M = 1.95$ vs. $M = 1.37$). The null hypothesis was rejected.

No statistically significant difference was found between employment type and comprehensive nutrition policy. Findings indicate that a district director employed by the school is just as likely as a district director employed by a contract company to be
employed by a school in which comprehensive nutrition policies are present. The null hypothesis was accepted.

No statistically significant difference was found between the age of the district school food service director and comprehensive school nutrition policy. Age of the district school food service director was not related to the reporting of comprehensive school nutrition policy in Ohio public schools in this study. The null hypothesis was accepted.

No statistically significant difference was found in years employed and reporting of comprehensive school nutrition policy. Results indicate that the reporting of comprehensive nutrition policy is not influenced by the experience (years of employment) of the district food service director in Ohio public schools in this study. The null hypothesis was accepted.

**Hypothesis Nine**

Null Hypothesis: No statistically significant difference existed between selected demographic variables and comprehensive school food practice. No statistically significant difference existed between sexes. These findings indicated that men employed as district school food service directors are no more likely to report comprehensive nutrition practice than women who are employed as the district school food service director. The null hypothesis was accepted.

No statistically significant difference was found between school type and comprehensive school practice. The null hypothesis was accepted.
No statistically significant difference was found between employment type and comprehensive nutrition practice. Findings indicate that a district director employed by the school is just as likely as a district director employed by a contract company to report comprehensive nutrition practice. The null hypothesis was accepted.

No statistically significant difference was found between the age of the district school food service director and comprehensive school nutrition practice. Age of the district school food service director was not related to the presence of comprehensive school nutrition practice in Ohio public schools in this study. The null hypothesis was accepted.

No statistically significant difference was found in years employed and the presence of comprehensive school nutrition practice. Results indicate that the presence of comprehensive nutrition practice is not influenced by the experience (years of employment) of the district food service director in Ohio public schools in this study. The null hypothesis was accepted.

No statistically significant difference was found between school type and comprehensive nutrition practice. The null hypothesis was accepted.

A statistically significant difference existed between those district directors employed by a contracted company and those employed by the school. Those employed by a contracted company reported more comprehensive nutrition practice than those employed directly by the school. The null hypothesis was rejected.

No statistically significant difference was found between the age of the district school food service director and comprehensive school nutrition practice. Age of the
district school food service director was not related to the presence of comprehensive school nutrition practice in Ohio public schools in this study. The null hypothesis was accepted.

No statistically significant relationship was found between comprehensive nutrition practice and years of experience. Results indicate that the presence of comprehensive nutrition practice is not influenced by the experience (years of employment) of the district food service director in Ohio public schools. The null hypothesis was accepted.
CHAPTER V
DISCUSSION AND RECOMMENDATIONS

Purpose of the Study

The purpose of this study was to analyze the impact of demographic characteristics and perceived self-efficacy on the development and implementation of food related policies and practices in schools among district school food service directors.

Discussion

With an expanding obesity epidemic in the United States, there has been much discussion regarding potential interventions and the venues in which they can be supplied. The National Academy of Sciences, Institute of Medicine, and the CDC have identified schools as a primary location in which to address this national problem (CDC, 2009c; IOM, 2005). In specific, a recent study by Li and Hooker (2010) has identified public school children in particular to be at risk for overweight.

Prevention of future health risk can be accomplished in a variety of ways in the school setting. Such goals can be achieved through adoption of health-promoting policies, by following health-focused practices within a supportive environment, and by employing personnel with appropriate training to contribute more effectively to comprehensive school nutrition policy and practice.

An “Environmental Scan” performed by the American Dietetic Association in 2006 identified the importance of a policy focus for health and wellness issues into the next decade. The American Dietetic Association (ADA) is the largest food and nutrition professional organization in the United States. With approximately 70,000 members, this
organization is committed to promoting the health of Americans through research, education, and advocacy (ADA, 2009a). This policy focus identified in the 2006 “Environmental Scan” needs to be applied in all areas in which the health of children is influenced. Schools are a place where children are spending a great deal of time. It is important that in this venue health-focused policies should match practice. The IOM echoes this call for the adoption of appropriate policies, particularly in the area of obesity prevention (Jarratt & Mahaffie, 2007). Policy support in schools also was emphasized in the joint position paper issued by the American Dietetic Association, the Society for Nutrition Education and the American School Food Service Association in 2003. This position paper focused particularly on the area of nutrition and its role in the health of children and in the prevention of obesity. Emphasis was placed on the importance of policies guiding the necessary requirements needed for comprehensive nutrition programming. Indeed, the school cafeteria has been identified as a “learning laboratory” where policies of healthy eating and nutrition education for children can be put into practice (NASBE, 2000). In general, coordinated health policies were reinforced by the National Association of State Boards of Education in 2000. This association produced a document entitled *Fit, Healthy, and Ready To Learn* to support the connection between health (including healthy eating) and achievement in school in 2000. Interestingly, in that same year, teachers surveyed by the National Center for Education Statistics (NCES) revealed that only one-third of subjects and their colleagues reported access to coordinated nutrition policy (NCES, 2000).
Many advocacy organizations support the practice of sound nutrition within the school setting. The American School Health Association developed a resolution regarding the practice of good nutrition within the school setting (2005a). This document underscores the need to provide healthy food choices in every area of the school environment. In addition to the cafeteria, vending machines, snack bars, school stores, concession stands, and a la carte menu items are identified as places to provide healthy options. Also included in this resolution is a call for the adoption of standards for those foods. The American Dietetic Association issued a Position Paper in 2006 calling for nutrition integrity in schools. Nutrition Integrity refers to the placement of foods and beverages in the school environment that reflect the Dietary Guidelines for Americans and that these guidelines in combination with other healthful practices contribute to academic achievement and to the development of healthy eating habits.

In addition to policy and practice, appropriate training for school personnel is needed. The school food service director has been identified as a key player in the adoption of healthy practices and policies regarding school food and in wellness in general (USDA: FNS n.d.-a). The need for appropriate professional preparation for the school food service director is emphasized by many (ADA, 2003; Cater & Carr, 2004; Jarratt & Mahaffie, 2007). In 2009, the School Nutrition Association Legislative Action Conference reported that their members were in support of legislation to establish professional standards for those who direct school nutrition programs (SNA, 2009). One of the reasons for this action was to respond to a finding by Expectmore.gov, which suggested that acceptable performance goals and data collection to assess the National
School Lunch Program were not in place. The agency also expressed that this was unacceptable (SNA, 2009). *Expectmore* is a government agency responsible for evaluating the effectiveness of government programs (Expectmore.gov, n.d.).

In addition to appropriate training, self-efficacy can assist in the promotion of needed policies and practices in the work setting. Self-efficacy has been demonstrated to be helpful in cultivating more professional behavior and practice. Several researchers in a variety of settings have reported this (Bandura, 1997; Kuokkanen & Leino-Kilpi, 2001; Manojlovich, 2005a, 2005b).

**Hypothesis One**

Null Hypothesis: No statistically significant difference exists between district school food service directors who have lower educational attainment and those with higher educational attainment in the implementation of comprehensive nutrition policy.

Findings from this study revealed that there was no statistically significant difference in the reporting of comprehensive school nutrition policy by subjects who held a degree and those who did not. As such, irrespective of academic degree status, subjects in this population were equally likely to report comprehensive nutrition policy in their schools. Action for Healthy Kids (2008), a National advocacy group whose mission is to address the obesity epidemic in children, reported in *Progress or Promises* that there was a gap in the training of nutrition professionals in schools. In 2009, the School Nutrition Association proposed tentative standards for School Nutrition Professionals calling for those who hold the title of director (usually at the district level) hold a minimum of an
Associate’s degree, with a Bachelor’s degree preferred (SNA, 2009). As the enrollment count of the school increases, so do the degree requirements (SNA, 2009).

**Hypothesis Two**

Null Hypothesis: No statistically significant difference exists between district school food service directors who have lower educational attainment and those with higher educational attainment in the level of comprehensive nutrition practice.

Findings from this study revealed that there was no statistically significant difference in the reporting of comprehensive school nutrition practice by subjects who held a degree and those who did not. As such, irrespective of academic degree status, subjects in this population were equally likely to report comprehensive nutrition practice in their schools. In contrast to the body of literature, degree status in the district school food service director was not associated with more comprehensive school nutrition practice. The School Nutrition Association (2009), however, is calling for additional educational preparation for those in district director positions in schools, with a bachelor’s degree being preferred. While investigating compliance with Wellness Policy directives, Moag-Stahlberg et al. (2008) reported that there were low levels of standards in place regarding the professional training/preparation of food service staff. In addition, they found low levels of standards in place regarding foods served outside of the school meals programs (competitive foods). This led to the recommendation that more needed to be done regarding the placement of qualified staff and in the development, revision, and evaluation of policy (Moag-Stahlberg et al., 2008).
Hypothesis Three

Null Hypothesis: No statistically significant difference exists between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition policy.

Findings from this study revealed a statistically significant difference was found between district school food service directors who held a professional certification and those who did not hold certification and their reported implementation of comprehensive school nutrition policy. Certifications reported were School Nutrition Association certification, Certification as a Dietary Manager, Certified Food Protection Professional, Registered or Licensed Dietitian, or Certification in Culinary Arts. As such, those subjects who possessed certification credentials were more likely to report comprehensive nutrition policy in their schools than district directors who did not hold a credential. This supports the recommendations of various groups regarding the training and professional preparation of school food service directors. Trust for America’s Health (2008), a non-profit organization focused on the prevention of disease, recommended that only certified professionals be hired to run school foodservice. This correlated with comments from the National Association of State Boards of Education (2000) who also recommended this action.

These organizations associate appropriate certification and preparation standards with improved policy within the school. Team Nutrition, a behavior-focused school program that encourages healthy choices and foods for school children, supports the adoption of school policies that support healthy eating (USDA: FNS, n.d.-c). In order to
increase the policies supportive of healthy eating, professionally trained staff need to be in place. Unfortunately, only 15.8% of school districts require the food service director to be certified (CDC, 2008c). O’Toole et al. (2007) reported this low level of certification as the most significant challenge facing schools and as the most significant challenge to improvement in the school food environment.

**Hypothesis Four**

Null Hypothesis: No statistically significant difference exists between district school food service directors who have no certification and those who have certification and the implementation of comprehensive school nutrition practice.

In this study, a statistically significant difference was found between district school food service directors who held certification and those who did not hold certification and their reported implementation of comprehensive school nutrition practice. Those district directors who held a certification credential were more likely to report comprehensive nutrition practices in their school compared to those district directors who did not hold a certification credential. As discussed earlier, promoting healthy policies and practices in the school setting are more likely with properly trained staff. Many groups have issued statements calling for certification in school food service directors (ADA, 2003; NASBE, 2000; SNA, 2009). Properly trained staff is required to improve on the practices currently in place in many schools. SHPPS 2006 found that a majority of schools continue unhealthy nutrition practices that do not support healthy eating (CDC, 2008c). Not surprisingly, SHPPS 2006 also found that a majority of school food service directors possessed only a high school education or GED (Kann et al.,
Watkins (2001) stated that these practices in schools have placed children at risk now and at risk in the future.

**Hypothesis Five**

Null Hypothesis: No statistically significant difference exists between district school food service directors in perceived self-efficacy and the implementation of comprehensive school nutrition policy.

Findings of this study revealed that there was a statistically significant difference among district school food service directors in self-efficacy and the reporting of comprehensive school nutrition policy implementation. District directors with higher perceived self-efficacy concerning work tasks reported more difficulty in implementing school nutrition policy when compared to their counterparts who reported lower self-efficacy regarding work tasks. These findings are not consistent with other literature. Bandura (1997) and Manojlovich (2005a, 2005b) in particular have discovered that people with greater self-efficacy tend to perform better at work and that self-efficacy is required for increased professionalism, which consequently leads to needed change. In this study, it could be that subjects reporting greater self-efficacy were more realistic in the identification of barriers that may impede progress on the job. Interestingly, all subjects were equally confident in their skill set (job skills) with no difference noted between training or professional preparation and the confidence that they had in their abilities or training. An inadequate skill set was listed last in the list of barriers that prevented the accomplishment of work tasks. Why the reported confidence in skill set
did not translate into confidence in their ability to perform tasks like policy implementation and maintenance at work is unknown.

**Hypothesis Six**

Null Hypothesis: No statistically significant difference exists between district school food service directors in perceived self-efficacy and the maintenance of comprehensive school nutrition policy.

Findings from this study revealed that there was a statistically significant difference among subjects regarding perceived self-efficacy and comprehensive school policy maintenance. As in implementation of comprehensive school nutrition policy this study revealed that subjects with lower self-efficacy scores reported less difficulty in maintaining comprehensive school food policy than their counterparts with higher self-efficacy. Again, this finding was not expected. This finding is also not consistent with the literature. Previous research has demonstrated that individuals with high levels of self-efficacy are more efficient on the job (Bandura, 1997; Manojlovich, 2005a, 2005b). Possible reasons for these results are similar to those given for hypothesis five. It could be that subjects reporting higher levels of self-efficacy were more realistic and sensitive to barrier identification in the area of comprehensive school nutrition policy. It is also possible that this group did not give responses that are similar to a majority of people as represented in other research findings.
**Hypothesis Seven**

Null Hypothesis: No statistically significant difference exists between barrier identification by district school food service directors in regards to policy implementation.

Findings from this study revealed there was a difference in the barriers to policy implementation identified by the school food service directors. Barriers were not reported equally often. Six barriers were provided as possible choices. These choices included lack of administrative support, lack of time, lack of funds, lack of parental support, difficulty coordinating with teachers, lack of skills/training. Results indicated that a lack of funds was listed most frequently by subjects \((N = 84, 23\%)\) as the primary barrier to comprehensive nutrition policy implementation. The reason listed least often by subjects was that of a poor skill set/lack of training \((N = 17, 4.7\%)\). These findings are consistent with those discovered by the School Nutrition Association. In their document *From Cupcakes to Carrots*, the organization reported that financial constraints were a primary barrier in accomplishing needed change in the school food environment (SNA, 2007). A study conducted by the National Food Service Institute revealed that school nutrition directors rated factors that could help with promoting wellness in the school and it was reported that financial support was rated as most important. This was followed by time, parent support, and administrative support in rank order (Bounds et al., 2008). Wharton, Long, and Schwartz (2008), however, conducted a systematic review of the literature to examine the financial impact of healthier food policy implementation in schools. Interestingly, they discovered that the collective results revealed that these fears
are unfounded and that most schools, in fact, did not lose revenue and that some schools even experienced gains when implementing healthier policies. They also reported that a barrier that occurred the least was that of no support of the school board or administrators. On the other hand, they did report lack of priority on the part of administration to fit nutrition education into the curriculum (Wharton et al., 2008). When asked about needs to promote wellness in school, school food service directors and managers surveyed by the National Food Service Management Institute (Bounds et al., 2008) reported lack of financial support and lack of time as most pressing barriers.

**Hypothesis Eight**

Null Hypothesis: No statistically significant difference exists between selected demographic variables and comprehensive school nutrition policy.

**Sex.** Results from this study revealed that there was a statistically significant difference between sexes in the reporting of comprehensive school nutrition policy. Males were more likely to report comprehensive policy in their respective school district compared to their female counterparts. Results should be interpreted with caution, however, as the groups were not balanced. In this study, females outnumbered males 6 to 1. Nationwide the balance of male to female food service directors is about 39% and 27%, respectively (both assistant managers and general managers; Women’s foodservice forum, n.d). A study of the perceptions of district school food service directors and food safety issues was conducted in 2002. This study reported that 83% of respondents were female (Giampaoli, Sneed, Clusky, & Koenig, 2002). The findings of this study (Females = 84.1%) are consistent with the 2002 study.
School type. Findings from this study reveal no statistically significant difference between school type and comprehensive school nutrition policy. Schools in rural, urban, and suburban areas reported similar results regarding comprehensive nutrition policy. Nanney et al. (2008) evaluated school wellness policies and practices in order to examine the relationship between them and the risk of obesity in school children. Findings reveal that schools in urban settings were more likely to offer healthier choices to the children than those schools located in rural settings. This practice was over three times more common in the urban schools than those located in rural areas. Findings such as this are interesting given the number and location of farms in the rural areas. This is also unusual given the practice of the farm to school concept, which focuses on bringing fruits and vegetables from farms to urban areas where accessibility may be lowest. These findings specifically focus on the offering of healthful food options. Another policy examined by Nanney et al. was the policy to allow snacks to be purchased from vending machines during lunch hour. Schools located in rural areas were again more likely to have a policy, which allowed this type of practice (Nanney et al., 2008).

Age. Findings from this study reveal that there is a very weak correlation between the age of the district school food service director and reported comprehensive school nutrition policy. Age, therefore, did not correlate with the reporting of comprehensive nutrition policy. This study revealed that the average age of the district level director was 51.43 years. Fifteen subjects, however, did not report their age. A 2002 study examining the perceptions of district school food service directors and food safety programming revealed that 72% of the respondents were between the ages of 36
and 55 years (Giampaoli et al., 2002). Other studies regarding age and attitudes of food service directors regarding job duties revealed that younger subjects were more positive about their profession than older subjects (Kandiah et al., 2009) and that lifelong learning was valued irrespective of age (Maurer & Weiss, 2010).

**Employment type.** Findings from this study revealed no statistically significant difference between employment type and reporting of comprehensive nutrition policy. These results indicate that type of employment (school or contract management company) did not determine the reporting of comprehensive nutrition policies. Directors employed directly by schools were just as likely to report the use of comprehensive nutrition policies as those who were employed by a contract management company. Of the 601 potential district school food service directors available to provide results for this study, approximately 50 (8.5%) were employed by a contract management company. A list of school districts, which employed contract management services for school food service, was provided by the Ohio Department of Education (2010).

**Employment length.** This study revealed no statistically significant difference in years employed and the reporting of comprehensive school nutrition policy. District school food service directors employed for many years were equally likely to report comprehensive nutrition policies in their schools as those directors employed for fewer years. Length of employment does not determine the reporting of comprehensive school nutrition policy. Cater and Carr (2004) examined food service directors’ prioritization regarding job competencies based on employment length. Results are described as follows: “For directors/supervisors, importance ratings for the functional areas were not
different based on the number of years of food service experience and the number of years of school food service experience” (p. 20).

**Hypothesis Nine**

Null Hypothesis: No statistically significant difference exists between selected demographic variables and comprehensive school nutrition practice.

**Sex.** Results of this study revealed that no statistically significant difference existed between sexes in the reporting of comprehensive school nutrition practice. District food service managers who are men or women were equally likely to report comprehensive nutrition practice in their school districts. As previously reported, the sex of district food service directors in a similar study was 83% females (Giampaoli et al., 2002). This is similar to this study’s distribution at 84%. Gender specific practices in the workplace were reported by Greener (2007) and demonstrated that males are more likely to be concerned with winning in the workplace while women are motivated by accomplishing tasks. Robinson and Lipman-Blumen (2003) also revealed that women are more task-oriented in the workplace. Based on the preexisting body of literature, it would be expected that women would be more inclined to report comprehensive nutrition practices as they appear to be more task-oriented than men.

**School type.** This study revealed that no statistically significant difference was found between school type and the reporting of comprehensive school nutrition practice. Schools, regardless of their location (urban, suburban, or rural), were equally likely to report comprehensive school nutrition practices. Again, Nanney et al. (2008) did find differences in the offering of healthful food choices depending on school type.
Differences were also detected in vending availability. Like healthful food offerings, vending machines were accessible in rural schools during lunch hours, which provided less nutritious foods within the school setting.

**Employment type.** Findings from this study revealed that a statistically significant difference was found between employment type and reporting of comprehensive nutrition practice. The results demonstrate that those employed by contract management companies were more likely to report comprehensive school nutrition practices in their districts. It should be noted that the groups were unbalanced with contract employees representing only 6% of the group sampled. Approximately 8% of potential public school districts in this study employed a food service director who was provided through a contract management company (ODE, 2010). Contract management companies could have more standardized practice recommendations that are applicable across locations. Those employed by the schools could be tailoring practices to their unique situations and could be less likely to follow standardized procedures.

**Employment length.** This study revealed that no statistically significant difference was found in years employed and the reporting of comprehensive school nutrition practice. A 2002 study by Giampaoli et al. reported that the average length of employment in food service by surveyed directors was 14 years. This same study revealed that 68% of respondents were employed for 16 or more years (Giampaoli et al., 2002). Most district food service directors in Ohio reported working less than 6 years ($N = 115$). Thirty-two percent reported working for 16 or more years. The preexisting body of literature has reported differences in employment length and prioritization of job duties.
(Cater & Carr, 2004), with those working fewer years listing food production duties as more important than others.

**Nutrition education involvement.** Results from this study revealed that a statistically significant difference existed between those district directors with certification and those without certification in nutrition education activities performed. Those district school food service directors with certification reported involvement in more nutrition education activities than those without certification. Watkins (2001) identified nutrition education as essential to the nation achieving its health goals. The CDC also issued guidelines in 1996 calling for a minimum of 50 hours of nutrition education to be provided in schools during a year. Unfortunately, the NCES (2000) reported that only an average of 15 hours were being supplied by the average school as reported by teachers. Clearly, nutrition education is held in high esteem by many governmental agencies. The USDA Report to Congress, *Promoting Healthy Eating: An Investment in the Future* in 1999, promoted the Team Nutrition program for schools in that it includes multidisciplinary approaches and contains behavior change components based on current scientific information. This study demonstrates that district level directors who hold certification are performing more nutrition education activities than those who do not hold such certification.

**Conclusions**

Based on the discussion of the research results, the following conclusions can be assumed based on the results of the analyses.
Comprehensive School Nutrition Policy and Educational Attainment

In this study, there was no difference in reported comprehensive school nutrition policy when comparing district school food service directors who held a degree and those who did not.

Comprehensive School Nutrition Practice and Educational Attainment

In this study, there was no difference in reported comprehensive school nutrition practice when comparing district school food service directors who held a degree and those who did not.

Comprehensive School Nutrition Policy and Certification

In this population, district school food service directors who held certification reported higher scores in comprehensive school nutrition policy for their district. This suggests that district school food service directors who held certification were more likely to be actively involved in influencing policy decisions within the school district.

Comprehensive School Nutrition Practice and Certification

In this population, district school food service directors who held certification reported higher scores in comprehensive nutrition practice for their district. This suggests that district school food service directors who held certification were more likely to be actively involved in influencing practice decisions within the school district.

Self-Efficacy and Comprehensive School Nutrition Policy

In this study, district school food service directors who reported higher self-efficacy were less likely to report the presence of comprehensive school nutrition policy. These results were unexpected and not consistent with the body of literature.
Self-Efficacy and Comprehensive School Nutrition Practice

In this study, district school food service directors who reported higher self-efficacy were less likely to report the presence of comprehensive school nutrition practice. This is not consistent with the literature. The results were unexpected.

Comprehensive School Nutrition Policy and Selected Demographic Variables

**Sex.** In this study, district school food service directors who were male reported more comprehensive school nutrition policy. These results should be interpreted with caution, however, as the groups were unbalanced with males outnumbered by females 6 to 1. These results imply that males are more effective in influencing school nutrition policy when compared to females. Similar to the 2002 study by Giampaoli et al., this research finds that 84% of the respondents were female.

**Age.** In this study, age correlated very weakly with comprehensive nutrition policy.

**Employment length.** In this study, the number of years employed did not influence comprehensive school nutrition policy. More experienced district school food service directors were just as likely to report comprehensive school nutrition policy as those who were employed for fewer years.

**School type.** In this study, district school food service directors employed by urban schools were just as likely to report comprehensive school nutrition policy as those employed by suburban or rural schools. This finding is not consistent with the literature. Previous studies have shown that urban schools have been more likely to follow comprehensive nutrition policy than those found in rural areas.
Employment type. In this study, district school food service directors employed by contract companies were just as likely to report comprehensive school nutrition policy as those employed directly by the school.

Comprehensive School Nutrition Practice and Selected Demographic Variables

Sex. In this study, there was no significant difference in the reporting comprehensive school nutrition practice between males and females. These results should be interpreted with caution, however, as the groups were unbalanced with males outnumbered by females 6 to 1. These results imply that the practices in schools are about the same regardless of the sex of the district school food service director.

Age. In this study, age correlated very weakly with comprehensive school nutrition practice.

Employment length. In this study, the number of years employed did not influence comprehensive school nutrition practice. More experienced district school food service directors were just as likely to report comprehensive school nutrition practice as those who were employed for fewer years.

School type. In this study, district school food service directors employed by urban schools were just as likely to report comprehensive school nutrition practice as those employed by suburban or rural schools. This finding is not consistent with the literature. Previous studies have demonstrated that urban schools have been more likely to follow comprehensive nutrition practice than those found in rural areas.

Employment type. In this study, district school food service directors employed by contract companies were more likely to report comprehensive school nutrition practice
than those employed directly by the school. Both employment types were similar in
policy but differences were observed in the reporting of practices. Perhaps contract
companies place more emphasis on healthy practices or follow through in putting policy
into action. Another possible reason for the difference is that public schools could be
more likely to have policies in writing but may lack the funds to put all nutrition policies
into action.

Recommendations for Further Research

Findings from this study provided insight for several potential lines of research. The outcomes of this study may be helpful in reducing the rate of childhood obesity or in increasing the health status of public school children by way of improved nutrition policy and practice. Based on the results of this research and in light of the preexisting body of literature, the following recommendations can be made:

There is a need for strengthening the link between school nutrition policy and practice and the health of children. This study needs to be replicated in other school types in Ohio (parochial and charter/alternative), and in other states in the nation in order to determine if similar findings would exist. Encouraging the use of tools such as the School Health Index to evaluate schools would be particularly helpful.

Collaboration activities with other parties are recommended. The SHPPS study of 2006 examined a variety of ways in which food service directors collaborated with others. Collaboration activities included those practices that joined with state agencies, higher education facilities, advocacy groups, or others within the school setting (Kann et al., 2007). Collaborative activities did increase between the SHPPS Study of 2000 and
that of 2006 with a specific note that collaboration within the school did increase substantially, particularly with health education and mental health staff members (Kann et al., 2007).

Collaboration with community members and utilization of community resources is also recommended. Cyzman, Wierenga, and Sielawa (2009) suggested improving nutrition and nutrition education in school children by adopting more community-based responses to the school food environment. This can be accomplished through the use of community/school gardens and through partnering efforts with local farmers and farmers markets. Using these interventions can encourage the intake of lower calorie, nutrient-rich foods that promote healthy weight and discourage obesity. Utilizing these techniques can also enhance educational curriculum. A similar school-community collaboration called “Rock-On Café” in schools in two New York counties resulted in a 14% increase in fresh fruit and vegetable consumption by schoolchildren with no net increase in overall expenditures on food (Johnston, Denniston, Morgan, & Bordeau, 2009). If schools, however, contract food services with a contract management company, care must be taken to make provision in the contract for use and support of local farmers or food suppliers. Often, contracts supplied by contract management companies can require purchases from selected vendors thereby preventing support and use of local commodities (Trainor, 2009).

Parent training in order for parents to identify overweight in their children would also be helpful. Many parents do not recognize overweight in their children (Chomitz, Collins, Kim, Kramer, & McGowan, 2004). One study also demonstrated that school
children receive a majority of their calories from high-energy density-low nutrient foods in the home environment (Briefel, Wilson, & Gleason, 2009). The Institute of Medicine (2005) supports this effort.

Training for school food service personnel would be beneficial. District school food service supervisors working with teachers to provide classroom nutrition education would enhance the school health curriculum. A national survey conducted by the National Food Service Management Institute discovered that visits to the classroom to provide nutrition education rated along with kitchen field trips and tasting parties as the lowest competencies identified by school district food service directors (Cater & Carr, 2004). In addition, training district school food service directors on the importance of enforcing wellness policies would assist in improving the school food environment. A study of the public school districts in the state of Pennsylvania revealed that even though wellness policies are in place, there are concerns regarding the ability of the school food service director to monitor or enforce those policies. Conclusions suggested that there is room for improvement (Probart, McDonnell, Weirich, Schilling, & Fekete, 2008). It should be noted that in this Pennsylvania study, district school food service directors were named behind only the school administrator as the individual who is most responsible for wellness policy implementation. As wellness policies encompass more than nutrition and food-related issues, there is a question as to whether the district school food service director should in fact be responsible for all wellness policies rather than assume responsibility only for those that are food related (Probart et al., 2008).
Utilizing the school cafeteria as a learning laboratory is essential, as proposed by the School Health Policies and Programs Study (CDC, 2008c). Research should be conducted on this concept. It is unknown how many schools actively pursue this ideal. The Team Nutrition program promotes this recommendation (USDA, 1999).

Qualitative studies to examine the nature of self-efficacy in food service directors would be informative. As indicated earlier, this study demonstrated that there was no difference in self-efficacy among district school food service directors regardless of degree or certification status. Both groups felt equally confident in their abilities; however, those reporting higher self-efficacy were less likely to identify barriers to policy implementation and maintenance. The greater body of literature did not support these results.

Limitations

Respondents to this study are individuals and care should be taken not to generalize responses to all district school food service directors in the state of Ohio or to district school food service directors in other states. Individuals may assign different meanings to items on an instrument due to individual difference and individual interpretation. This can potentially affect the results. Generalizations cannot be made beyond the subjects in this study.

The self-report nature of this instrument also limits its generalizability. Individuals may not respond to items accurately due to recall limitations or by purposeful falsification. Neither can be ruled out.
In spite of an excellent response rate of approximately 61%, the subjects in this study cannot represent the body of all district school food service directors. Response rates could have been improved had additional waves of mailing been conducted or if the incentives offered were higher. Conclusions can only be attributed to this study.

Responses are limited to those that were provided in the instrument. Therefore, recommendations can only be made as they reflect these results.
APPENDICES
APPENDIX A

AMERICAN SCHOOL HEALTH ASSOCIATION RESOLUTION
ASHA Encourages Schools to Adopt and Implement Nutrition Policy

WHEREAS, the school environment influences students' attitudes and behaviors regarding food; 
WHEREAS, healthy eating patterns during childhood promote optimal growth and development and prevent health problems, such as iron deficiency anemia, obesity, eating disorders, dental caries, coronary heart disease, cancer, stroke, and diabetes; 
WHEREAS, Healthy People 2010 objectives 7-2 calls for schools to provide health education to prevent health problems including education about unhealthy dietary patterns; 
WHEREAS, Healthy People 2010 objective 13-15 calls for increasing the proportion of children and adolescents aged 6 to 19 whose intake of meals and snacks at school contributes to good overall dietary quality; 
WHEREAS, school-based nutrition education can improve dietary practices that affect young persons' health, growth and development; 
WHEREAS, The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity 2001 recommends that "individuals and groups across all settings... adopt policies specifying that all foods and beverages available at school contribute toward eating patterns that are consistent with the Dietary Guidelines for Americans"; 
WHEREAS, in 1997, the Institute of Medicine advised that students should receive health-related education and services necessary for them to derive maximum benefit from their education and enable them to become healthy, productive adults; 
WHEREAS, the 2004 Child Nutrition Reauthorization Act requires school districts that receive funds for school meal programs to develop wellness policies; 
WHEREAS, numerous national organizations have model policies or have collected samples of policies, and the federal government has guidance for such policies; 
WHEREAS, in 93.3% of senior high schools, 85.5% of middle schools, and 58.1% of elementary schools in the United States students can purchase soft drinks, fruit and sports drinks (not 100% juice) from vending machines, school stores, canteen, or snack bars; 
WHEREAS, children age nine and older are heavy consumers of sodas. By the time they are 14 years of age or older, 32% of young women and 52% of young men are consuming three or more servings of soda per day; 
WHEREAS, school food service managers and school officials report that expanding the number and variety of healthy food choices as part of the school breakfast and lunch program increases the likelihood that students will participate in the program; 
WHEREAS, providing students with adequate time to eat and providing a pleasant eating environment is a step that schools can take to encourage healthy eating behaviors of their students; 
THEREFORE, BE IT RESOLVED, that the American School Health Association encourages schools to adopt a nutrition policy that:

1) Requires all nutrition education, programs, and services and be delivered within the context of a coordinated school health program; 
2) Requires all students to participate in nutrition education that supports lifelong healthy eating behaviors; 
3) Discourages the use of food as a reward or a punishment for students; 
4) Provides a safe and pleasant eating environment and allows students the time and space needed to enjoy school meals; 
5) Establishes procedures whereby students with health problems related to poor nutrition can receive appropriate care; 
6) Encourages a partnership with families and communities that fosters a positive nutritional environment; and 
7) Encourages the sale of nutritionally appropriate or non-food items for school-sponsored events.
fund-raising activities.

References

11. Action for Healthy Kids database of policies is available at http://www.actionforhealthykids.org/AFHK/resources; the National School Boards Association's database of school policies is available at www.nsba.org; a set of guidelines developed by school health experts is available at www.nationalguidelines.org.

Year Adopted: 2005

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Kent, OH 44240
330/678-1601 (phone); 330/678-4526 (fax); asha@ashaweb.org (e-mail)
www.ashaweb.org
Ms. Mincer,

Attached is the ASHA resolution, ASHA Encourages Schools to Adopt and Implement Nutrition Policy, for your use and reference in your dissertation.

Jennifer Corby
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Michael P. Corby 1986 - 2009

From: Jeanine Mincer [mailto:jmincher@ysu.edu]
Sent: Tuesday, April 20, 2010 9:17 AM
To: jcorby@ashaweb.org
Subject: RE: ASHA Resolutions

Yet, this is the resolution "ASHA Encourages Schools to Adopt and Implement Nutrition Policy". Jeanine.

https://my.ysu.edu/cp/email/message?msgId=e1f97792b3c67c225b7723e51d287e-3fNYoungst... 4/23/2010
APPENDIX B
DIETARY GUIDELINES FOR AMERICANS
Key Recommendations for the General Population

ADEQUATE NUTRIENTS WITHIN CALORIE NEEDS

• Consume a variety of nutrient-dense foods and beverages within and among the basic food groups while choosing foods that limit the intake of saturated and trans fats, cholesterol, added sugars, salt, and alcohol.
• Meet recommended intakes within energy needs by adopting a balanced eating pattern, such as the U.S. Department of Agriculture (USDA) Food Guide or the Dietary Approaches to Stop Hypertension (DASH) Eating Plan.

WEIGHT MANAGEMENT

• To maintain body weight in a healthy range, balance calories from foods and beverages with calories expended.
• To prevent gradual weight gain over time, make small decreases in food and beverage calories and increase physical activity.

PHYSICAL ACTIVITY

• Engage in regular physical activity and reduce sedentary activities to promote health, psychological well-being, and a healthy body weight.
  o To reduce the risk of chronic disease in adulthood: Engage in at least 30 minutes of moderate-intensity physical activity, above usual activity, at work or home on most days of the week.
  o For most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or longer duration.
  o To help manage body weight and prevent gradual, unhealthy body weight gain in adulthood: Engage in approximately 60 minutes of moderate- to vigorous-intensity activity on most days of the week while not exceeding caloric intake requirements.
  o To sustain weight loss in adulthood: Participate in at least 60 to 90 minutes of daily moderate-intensity physical activity while not exceeding caloric intake requirements. Some people may need to consult with a healthcare provider before participating in this level of activity.
• Achieve physical fitness by including cardiovascular conditioning, stretching exercises
for flexibility, and resistance exercises or calisthenics for muscle strength and endurance.

**FOOD GROUPS TO ENCOURAGE**

- Consume a sufficient amount of fruits and vegetables while staying within energy needs. Two cups of fruit and 2½ cups of vegetables per day are recommended for a reference 2,000-calorie intake, with higher or lower amounts depending on the calorie level.
- Choose a variety of fruits and vegetables each day. In particular, select from all five vegetable subgroups (dark green, orange, legumes, starchy vegetables, and other vegetables) several times a week.
- Consume 3 or more ounce-equivalents of whole-grain products per day, with the rest of the recommended grains coming from enriched or whole-grain products. In general, at least half the grains should come from whole grains.
- Consume 3 cups per day of fat-free or low-fat milk or equivalent milk products.

**FATS**

- Consume less than 10 percent of calories from saturated fatty acids and less than 300 mg/day of cholesterol, and keep *trans* fatty acid consumption as low as possible.
- Keep total fat intake between 20 to 35 percent of calories, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as fish, nuts, and vegetable oils.
- When selecting and preparing meat, poultry, dry beans, and milk or milk products, make choices that are lean, low-fat, or fat-free.
- Limit intake of fats and oils high in saturated and/or *trans* fatty acids, and choose products low in such fats and oils.

**CARBOHYDRATES**

- Choose fiber-rich fruits, vegetables, and whole grains often.
- Choose and prepare foods and beverages with little added sugars or caloric sweeteners, such as amounts suggested by the USDA Food Guide and the DASH Eating Plan.
- Reduce the incidence of dental caries by practicing good oral hygiene and consuming sugar- and starch-containing foods and beverages less frequently.

**SODIUM AND POTASSIUM**

- Consume less than 2,300 mg (approximately 1 teaspoon of salt) of sodium per day.
- Choose and prepare foods with little salt. At the same time, consume potassium-rich foods, such as fruits and vegetables.
ALCOHOLIC BEVERAGES

- Those who choose to drink alcoholic beverages should do so sensibly and in moderation—defined as the consumption of up to one drink per day for women and up to two drinks per day for men.
- Alcoholic beverages should not be consumed by some individuals, including those who cannot restrict their alcohol intake, women of childbearing age who may become pregnant, pregnant and lactating women, children and adolescents, individuals taking medications that can interact with alcohol, and those with specific medical conditions.
- Alcoholic beverages should be avoided by individuals engaging in activities that require attention, skill, or coordination, such as driving or operating machinery.

FOOD SAFETY

- To avoid microbial foodborne illness:
  - Clean hands, food contact surfaces, and fruits and vegetables. Meat and poultry should not be washed or rinsed.
  - Separate raw, cooked, and ready-to-eat foods while shopping, preparing, or storing foods.
  - Cook foods to a safe temperature to kill microorganisms.
  - Chill (refrigerate) perishable food promptly and defrost foods properly.
  - Avoid raw (unpasteurized) milk or any products made from unpasteurized milk, raw or partially cooked eggs or foods containing raw eggs, raw or undercooked meat and poultry, unpasteurized juices, and raw sprouts.

*Note: The Dietary Guidelines for Americans 2005 contains additional recommendations for specific populations. The full document is available at www.healthierus.gov/dietaryguidelines.*
APPENDIX C

HECAT HEALTHY BEHAVIOR OUTCOMES
HECAT: Module HE
HEALTHY EATING CURRICULUM

Description: This module contains the tools to analyze and score curricula that are intended to promote healthy eating, sound nutrition, and healthy dietary practices.

Healthy Behavior Outcomes
A pre-K–12 healthy eating curriculum should enable students to
- Eat a variety of whole grain products, fruits and vegetables, and fat-free or low-fat milk or equivalent milk products every day.
- Eat the appropriate number of servings from each food group every day.
- Choose foods that provide ample amounts of vitamins and minerals.
- Eat the appropriate amounts of foods that are high in fiber.
- Drink plenty of water.
- Limit foods and beverages high in added or processed sugars.
- Limit the intake of fat, avoiding foods with saturated and trans fats.
- Eat breakfast every day.
- Eat healthy snacks.
- Eat healthy foods when dining out.
- Prepare food in healthy ways.
- Balance caloric intake with caloric expenditure.
- Follow a plan for healthy weight management.

This module uses the National Health Education Standards as the framework for determining the extent to which the curriculum is likely to enable students to master the essential concepts (Standard 1) and skills (Standards 2–8) that promote healthy eating.

The concepts, sub-skills, and skill examples included in this module were developed through a rigorous process guided by research evidence and expert opinion on the types of knowledge, skills, and learning experiences that help students in grades pre-K–12 adopt and maintain healthy eating behavior. Appendix 5 also includes suggested concepts and skills for children ages 3–4, who might be enrolled in a school-based early childhood program.

Because school curricula must meet local community needs and conform to the curriculum requirements of the state or school district, users are encouraged to review the analysis items before analyzing curricula and add, delete, or revise them to meet local needs and requirements.

Some concepts and skill examples are relevant to more than one health topic. Look in other health topic modules to see if there are any related concepts or skill examples that might be added for the review of healthy eating curricula.

If a curriculum focuses on additional topics, such as physical activity or tobacco use, use the chapters that address those topics as well.

Overall Instructions
- Determine the desired Healthy Behavior Outcomes (box on left) that you expect a curriculum to address.
- Review the HECAT items in this module. Add, delete, or revise items to meet the selected healthy behavior outcomes, the curriculum requirements of the state or school district, and community needs.
- Review the completed General Curriculum Information (Chapter 2) for the curriculum under consideration.
- Read the curriculum to become familiar with its content and how it is organized.
- Complete the analysis of the curriculum for each standard in this module.
- Score the curriculum based on the analysis: There will be one rating score for functional knowledge or concepts (Standard 1) and two rating scores for each of the essential skills (Standards 2–6).
- Transfer scores from the analysis of each standard to the Overall Summary Form (Chapter 3).
- Complete a separate analysis for each curriculum being reviewed. Make additional copies of any analysis pages.
- Keep all written notes and comments to justify scores and to inform group discussions and curriculum decisions.
Healthy Eating

Standard 1

The Standard 1 curriculum analysis will result in a single score that reflects the extent to which the curriculum addresses the knowledge required to achieve the selected healthy eating behavior outcomes (page HE-1). This module lists the essential concepts to be completed by grades 2, 5, 8, and 12. These are listed by grade groups: pre-K–2; 3–5; 6–8; and 9–12, starting on page HE-3.

Directions for Standard 1

- Review the applicable grade level concepts (pages HE-3 through HE-8).
- Decide if any of the concepts need to be deleted or modified or if any additional concepts should be added to meet the needs of the community or to conform to the curriculum requirements of the state or school district. Some concepts may be reflected in the skill examples in Standards 2–8. Review all other standards before making changes to the concepts in Standard 1. Some relevant concepts might also be found in other health topic modules. Look in other related topic modules for concepts that might be edited and added to the list of concepts for this topic.
- Read the curriculum to become familiar with its content, the information provided for students, and the methods used to convey information and knowledge content.
- Place a check in the box next to each concept that is addressed by the curriculum and complete the Concept Coverage Score. Important — a concept is “addressed” if there is sufficient information provided in the curriculum for students to be able to demonstrate competency in this concept. Some concepts might require more evidence than others.
- Transfer the Concept Coverage Score to the appropriate line on the Overall Summary Form (Chapter 3).
- Record notes to justify scores and to inform group discussions and curriculum decisions.
- Analyze Standard 1 for each curriculum being reviewed. If the curriculum addresses more than one grade group, complete a separate analysis of Standard 1 for each group.
- Complete a separate Overall Summary Form for each curriculum and grade group.

Directions for Standards 2–8 are provided on page HE-9.
**Healthy Eating**

**Standard 1:** Students will comprehend concepts related to health promotion and disease prevention.

**After implementation of this curriculum, by grade 2, students will be able to:**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain the importance of choosing healthy foods and beverages.</td>
<td></td>
</tr>
<tr>
<td>Identify a variety of healthy snacks.</td>
<td></td>
</tr>
<tr>
<td>Identify the benefits of drinking plenty of water.</td>
<td></td>
</tr>
<tr>
<td>Describe the benefits of eating breakfast every day.</td>
<td></td>
</tr>
<tr>
<td>Describe the type of foods and beverages that should be limited.</td>
<td></td>
</tr>
<tr>
<td>Describe body signals that tell people when they are hungry and when they are full.</td>
<td></td>
</tr>
<tr>
<td>Describe how to keep food safe from harmful germs.</td>
<td></td>
</tr>
<tr>
<td>Identify eating behaviors that contribute to maintaining a healthy weight.</td>
<td></td>
</tr>
</tbody>
</table>

**Additional Concepts**

- [ ]
- [ ]
- [ ]

**CONCEPT COVERAGE SCORING:** Complete the score based on the criteria listed below.

- **4** = all of the concepts, (100%)
- **3** = most of the concepts, (67-99%)
- **2** = some of the concepts, (34-66%)
- **1** = a few of the concepts, (1-33%)
- **0** = none of the concepts, (0)

**TRANSFER THIS SCORE TO THE HEALTH INFORMATION/CONCEPTS LINE OF THE OVERALL SUMMARY FORM (CHAP. 3).**

**Notes:**

*Reminder: The HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise concepts to reflect community needs and to meet the curriculum requirements of the school district.*

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**HECAT: Promoting Healthy Eating**

**HE - 3**
Standard 1: Students will comprehend concepts related to health promotion and disease prevention.

After implementation of this curriculum, by grade 5, students will be able to:

**HEALTHY EATING (Check all that are given attention in the curriculum)**

- Name the food groups and a variety of nutritious food choices for each food group.
- Explain the importance of eating a variety of foods from all the food groups.
- Identify the number of servings of food from each food group that a child needs daily.
- Summarize the benefits of healthy eating.
- Explain the concept of eating in moderation.
- Describe the benefits of eating plenty of fruits and vegetables.
- Summarize the benefits of drinking plenty of water.
- Identify nutritious and non-nutritious beverages.
- Identify foods that are high in fat and low in fat.
- Identify foods that are high in added sugars.
- Describe the benefits of limiting the consumption of fat and added sugar.
- Conclude that breakfast should be eaten every day.
- Summarize body signals that tell people when they are hungry and when they are full.
- Describe methods to keep food safe from harmful germs.
- Explain that both eating habits and level of physical activity can affect a person's weight.
- Explain how eating disorders impact proper nutrition.

**Additional Concepts**

-  
-  

**CONCEPT COVERAGE SCORING:** Complete the score based on the criteria listed below.

<table>
<thead>
<tr>
<th>The curriculum addresses:</th>
<th>CONCEPT COVERAGE SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = all of the concepts. (100%)</td>
<td></td>
</tr>
</tbody>
</table>
Standard 1: Students will comprehend concepts related to health promotion and disease prevention.

After implementation of this curriculum, by grade 8, students will be able to:

- **HEALTHY EATING** (Check all that are given attention in the curriculum)
- Summarize a variety of nutritious food choices for each food group.
- Classify the number and appropriate sizes of servings of food from each food group that a person needs each day.
- Explain why some food groups have a greater number of recommended portions than other food groups.
- Analyze the benefits of healthy eating.
- Describe the federal dietary guidelines for teens.
- Explain the similarities and differences among protein, fats, and carbohydrates regarding nutritional value and food sources.
- Describe the benefits of eating in moderation.
- Summarize the benefits of eating plenty of fruits and vegetables.
- Analyze the benefits of drinking plenty of water.
- Differentiate between nutritious and non-nutritious beverages.
- Identify foods that are high in fiber.
- Identify food preparation methods that add less fat to food.
- Identify examples of whole grain foods.
- Describe the benefits of consuming an adequate amount of calcium and a variety of foods high in calcium.
- Describe the benefits of consuming foods high in iron.
- Summarize the benefits of limiting the consumption of fat and added sugar.
- Describe the relationship between what people eat their physical activity level, and their body weight.

Healthy Eating, Grades 6-8 continued on next page.

Reminder: The HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise concepts to reflect community needs and to meet the curriculum requirements of the school district.

HECAT: Promoting Healthy Eating
HE - 5
Healthy Eating

Standard 1: Grades 6–8

Students will comprehend concepts related to health promotion and disease prevention.

After implementation of this curriculum, by grade 8, students will be able to:

**HEALTHY EATING (Check all that are given attention in the curriculum)**

- Explain various methods available to evaluate body weight.
- Identify healthy and risky approaches to weight management.
- Differentiate between a positive and negative body image, and state the importance of a positive body image.
- Describe the signs, symptoms, and consequences of common eating disorders.
- Summarize how eating disorders impact proper nutrition.
- Summarize food safety strategies that can control germs that cause food borne illnesses.

**Additional Concepts**

- _______________________
- _______________________
- _______________________

**CONCEPT COVERAGE SCORING:** Complete the score based on the criteria listed below.

<table>
<thead>
<tr>
<th>The curriculum addresses:</th>
<th>CONCEPT COVERAGE SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = all of the concepts. (100%)</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>3 = most of the concepts. (67-99%)</td>
<td></td>
</tr>
<tr>
<td>2 = some of the concepts. (34-66%)</td>
<td></td>
</tr>
<tr>
<td>1 = a few of the concepts. (1-33%)</td>
<td></td>
</tr>
<tr>
<td>0 = none of the concepts. (0%)</td>
<td></td>
</tr>
</tbody>
</table>

TRANSFER THIS SCORE TO THE HEALTH INFORMATION/CONCEPTS LINE OF THE OVERALL SUMMARY FORM (CHAP. 3).

Notes:

Reminder: The HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise concepts to reflect community needs and to meet the curriculum requirements of the school district.
Healthy Eating

Standard 1: Grades 9-12

Students will comprehend concepts related to health promotion and disease prevention.

After implementation of this curriculum, by grade 12, students will be able to:

**HEALTHY EATING** (Check all that are given attention in the curriculum)

- [ ] Describe the recommendations of the *Dietary Guidelines for Americans*.
- [ ] Describe the relationship between nutrition and overall health.
- [ ] Describe the relationship between diet and chronic diseases such as heart disease, cancer, diabetes, hypertension, and osteoporosis.
- [ ] Analyze the benefits of healthy eating.
- [ ] Explain food sources that provide key nutrients.
- [ ] Describe the importance of eating a variety of the appropriate foods to meet daily nutrient and caloric needs.
- [ ] Analyze the benefits of drinking water before, during, and after physical activity.
- [ ] Explain how to incorporate foods that are high in fiber into a healthy daily diet.
- [ ] Explain how to incorporate an adequate amount of calcium into a healthy daily diet.
- [ ] Explain how to incorporate an adequate amount of iron into a healthy daily diet.
- [ ] Identify how to make a vegetarian diet healthy.
- [ ] Describe the importance of healthy eating and physical activity in maintaining a healthy weight.
- [ ] Explain how the *Dietary Guidelines for Americans* are useful in planning a healthy diet.

Healthy Eating, Grades 9-12 continued on next page.

Notes:

Reminder: The HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise concepts to reflect community needs and to meet the curriculum requirements of the school district.

HECAT: Promoting Healthy Eating
HE - 7
Standard 1: Grades 8–12

Students will comprehend concepts related to health promotion and disease prevention.

After implementation of this curriculum, by grade 12, students will be able to:

<table>
<thead>
<tr>
<th>HEALTHY EATING (Check all that are given attention in the curriculum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Describe healthy and risky approaches to weight management.</td>
</tr>
<tr>
<td>□ Explain the effects of eating disorders on healthy growth and development.</td>
</tr>
</tbody>
</table>

Additional Concepts

- 

- 

- 

- 

CONCEPT COVERAGE SCORING: Complete the score based on the criteria listed below.

The curriculum addresses:

4 = all of the concepts. (100%)  
3 = most of the concepts. (67-99%)  
2 = some of the concepts. (34-66%)  
1 = a few of the concepts. (1-33%)  
0 = none of the concepts. (0%)

TRANSFER THIS SCORE TO THE HEALTH INFORMATION/CONCEPTS LINE OF THE OVERALL SUMMARY FORM (CHAP. 3).

This is the end of Standard 1
Healthy Eating

Standards 2–8

The Standards 2–8 analysis will result in two ratings for each standard: one rating reflects the extent to which the curriculum addresses important skills and provides the student with the ability to learn and apply the skill; the second reflects the extent to which the curriculum provides the teacher with guidance to instruct and assess the skill.

The National Health Education Standards 2–8 describe the key processes and skills that students need to promote personal, family and community health. CDC reviewed these and other state-level standards, analyzed the research findings from effective programs, and used input from experts in health education to develop a list of relevant sub-skills for each standard.

Each standard 2–8 begins with a score page. This is followed by the sub-skills for that standard. The sub-skills are not specific to any one health topic. Skill examples, organized by grade groups, are provided to illustrate how the sub-skills for that standard can be applied to healthy eating.

The skill examples are not a complete list of all the ways the sub-skills can be applied to healthy eating. The examples should be reviewed carefully before the curriculum analysis and revised if necessary. Some skill examples in other health topic modules might be relevant. Review skill examples in other health topic modules for skill examples that could be edited and added to the skill examples for this topic.

Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise items to reflect community needs and meet the curriculum requirements of the school district.

Directions for Standards 2–8

- For each standard, review the list of sub-skills and skill examples for each grade group. Decide if any should be deleted or modified to meet the needs of the community or conform to the curriculum requirements of the state or school district. Additional skill examples could be included under other standards. Review all standards before making any changes.

- Read the curriculum to become familiar with the content, the focus on skill learning, and the methods used to convey skill learning.

- Complete the Student Skill Learning and Application Score and Teacher Instruction and Assessment Score by checking “yes” or “no” for each statement as it applies to the curriculum under review. Use the sub-skills and skill examples to help identify relevant skill outcomes.

- Add the total number of “yes” checks to arrive at an overall score for each scoring area. Transfer the two scores for each standard to the appropriate lines on the Overall Summary Form (Chapter 3).

- Record notes to justify scores and inform group discussions and decisions.

- Analyze Standards 2–8 for each curriculum being reviewed. If the curriculum addresses more than one grade group, complete a separate set of skill scores for each standard and each group.

- Complete a separate Overall Summary Form for each curriculum and grade group.
Healthy Eating

**Standard 2: Scores**

**Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide information to the students about the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Does the curriculum provide one opportunity or activity for students to practice the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide more than one opportunity or activity for students to practice the skills needed to meet this standard? (If yes, also check yes for #2 above.)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Does the curriculum provide opportunities for students to assess their own skill progress, such as personal check lists?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Student Skill Learning and Application Score (total number of “yes” checks)** ☐

Transfer this score to Standard 2: Analyzing Influences (see Student Learning/Application line) on the Overall Summary Form – Chap. 3.

**Teacher Instruction and Skill Assessment Scoring:** Complete the skill instruction and assessment score by checking the appropriate “yes” or “no” box for each criteria and summing the “yes” checks. See page HE-11 for Standard 2 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide guidance to help the teacher understand the steps required to learn and teach the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Does the curriculum provide guidance for the teacher to model the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide strategies for the teacher to assess the student’s ability to perform the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Are clear assessment standards provided for the teachers, such as a rubric or check sheet that explains the criteria that need to be met to demonstrate the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Teacher Instruction and Assessment Score (total number of “yes” checks)** ☐

Transfer this score to Standard 2: Analyzing Influences (see Teacher Instruction/AIessment line) on the Overall Summary Form – Chap. 3.

**Notes:**

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HECAT: Promoting Healthy Eating

HE - 10
Healthy Eating

Standard 2: Sub-Skills and Skill Examples

**Standard 2 Skill Examples**

After implementing this curriculum, students will be able to analyze the influence of family, peers, culture, media, technology, and other factors on healthy eating.

**Sub-Skills:** As a result of using this curriculum, students will be able to
- Analyze the influence of the media on personal health practices.
- Analyze parent and family influence on personal health practices.
- Analyze peer influence on personal health practices.
- Analyze community influence on personal health practices.
- Analyze the influence of cultural and peer norms on personal health practices.
- Analyze the influence of personal values and beliefs on personal health practices.
- Analyze the influence of alcohol and other drug use on judgment, self-control, and behavior.

Base the curriculum score on its ability to meet the entire standard — not just a few sub-skills for this standard.

**Skill Examples:** Below are examples that illustrate how a curriculum might address these skills. These examples are not intended to be a complete list of all the ways these skills can be addressed. When considering other examples, it is useful to think about the sub-skills in relation to the concepts emphasized in Standard 1. Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise skills or skill examples to reflect community needs and to conform to the curriculum requirements of the school district.

<table>
<thead>
<tr>
<th>Grades Pre-K–2</th>
<th>Grades 3–5</th>
<th>Grades 6–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain how family can influence food choices.</td>
<td>Describe how family and cultural traditions influence food choices.</td>
<td>Describe how personal values and feelings influence food choices.</td>
<td>Analyze how personal values and feelings influence food choices and eating behavior.</td>
</tr>
<tr>
<td>Describe how television advertisements can influence food choices.</td>
<td>Describe how personal preferences influence food choices.</td>
<td>Analyze how family and cultural influences on food choices.</td>
<td>Evaluate family and cultural influences on food choices.</td>
</tr>
<tr>
<td>Identify the various strategies used by the media to influence food choices.</td>
<td>Describe how peers influence food choices.</td>
<td>Summarize how peers influence food choices.</td>
<td>Analyze how peers influence food choices.</td>
</tr>
<tr>
<td>Describe how how peers can influence food choices.</td>
<td>Describe how technology affects the food supply and food choices.</td>
<td>Explain how the media influence food choices.</td>
<td>Analyze how advertising and marketing influence food choices.</td>
</tr>
<tr>
<td>Describe how how peers can influence food choices.</td>
<td>Describe how personal economics influences food choices.</td>
<td>Analyze how technology affects the availability of foods and food choices.</td>
<td>Analyze how personal economics influence food choices.</td>
</tr>
<tr>
<td>Explain how school policy can influence healthy or unhealthy eating.</td>
<td>Explain how school policy can influence healthy or unhealthy eating.</td>
<td>Analyze the influence of culture and media on body image and the subsequent effects on eating behavior.</td>
<td>Analyze how personal economics influence food choices.</td>
</tr>
</tbody>
</table>

HECAT: Promoting Healthy Eating
HE - 11
Healthy Eating

Standard 3: Students will demonstrate the ability to access valid information and products and services to enhance health.

**Student Skill Learning/Application Scoring:** Complete the skill application score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-13 for Standard 3 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide information to the students about the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Does the curriculum provide one opportunity or activity for students to practice the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide more than one opportunity or activity for students to practice the skills needed to meet this standard? (If yes, also check yes for #2 above.)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Does the curriculum provide opportunities for students to assess their own skill progress, such as personal check lists?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Student Skill Learning and Application Score (total number of "yes" checks)**

Transfer this score to Standard 3: Accessing Valid Information (see Student Learning/Application line) on the Overall Summary Form - Chap. 3.

**Teacher Instruction and Skill Assessment Scoring:** Complete the skill instruction and assessment score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-13 for Standard 3 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide guidance to help the teacher understand the steps required to learn and teach the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Does the curriculum provide guidance for the teacher to model the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide strategies for the teacher to assess the student's ability to perform the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Are clear assessment standards provided for the teachers, such as a rubric or check sheet that explains the criteria that need to be met to demonstrate the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Teacher Instruction and Assessment Score (total number of "yes" checks)**

Transfer this score to Standard 3: Accessing Valid Information (see Teacher Instruction/Assessment line) on the Overall Summary Form - Chap. 3.

**Notes:**

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HECAT: Promoting Healthy Eating

HE - 12
Healthy Eating

Standard 3: Sub-Skills and Skill Examples

**Skill Examples**

After implementing this curriculum, students will be able to demonstrate the ability to access valid information, products, and services to establish and maintain healthy eating.

**Sub-Skills:** As a result of using this curriculum, students will be able to
- Differentiate accurate from inaccurate health information.
- Select valid and reliable products and services.
- Access valid and reliable products and services that promote health.
- Access helpful people for accurate information.
- Identify trusted adults and professionals.
- Assess the accuracy and reliability of assistance for health-related problems.

Base the curriculum score on its ability to meet the entire standard — not just a few sub-skills for this standard.

**Skill Examples:** Below are examples that illustrate how a curriculum might address these skills. These examples are not intended to be a complete list of all the ways these skills can be addressed. When considering other examples, it is useful to think about the sub-skills in relation to the concepts emphasized in Standard 1. Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise skills or skill examples to reflect community needs and to conform to the curriculum requirements of the school district.

<table>
<thead>
<tr>
<th>Grades Pre-K–2</th>
<th>Grades 3–5</th>
<th>Grades 6–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify people who can provide accurate information about healthy eating.</td>
<td>Identify sources of reliable information about healthy eating.</td>
<td>Distinguish accurate nutrition information from inaccurate information.</td>
<td>Differentiate between accurate and inaccurate nutrition information.</td>
</tr>
<tr>
<td>Identify nutrition information on food labels.</td>
<td>Demonstrate the ability to access accurate information about healthy eating.</td>
<td>Summarize reliable sources of information about healthy eating.</td>
<td>Demonstrate the ability to access people who can provide accurate information and advice on healthy eating.</td>
</tr>
<tr>
<td></td>
<td>Demonstrate the ability to access people who can provide accurate information and advice on healthy eating.</td>
<td>Demonstrate the ability to access people who can provide accurate information and reliable advice on healthy eating.</td>
<td>Evaluate the nutrition information on food labels to compare products.</td>
</tr>
<tr>
<td></td>
<td>Use the nutrition information on food labels to compare products.</td>
<td>Analyze the nutrition information on food labels to compare products.</td>
<td>Demonstrate the ability to access information to determine healthy body weight.</td>
</tr>
<tr>
<td></td>
<td>Demonstrate the ability to access sources of accurate information about healthy eating and safe weight management.</td>
<td>Analyze the accuracy of claims of nutrition supplements and weight loss pills.</td>
<td>Analyze claims made in advertisements for nutrition supplements and weight loss products.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distinguish accurate information about healthy eating and safe weight management.</td>
<td>Analyze claims of performance-enhancing drugs and nutrition supplements on performance in physical activities.</td>
</tr>
</tbody>
</table>

HECAT: Promoting Healthy Eating
HE - 13
Healthy Eating

Standard 4: Scores

Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Student Skill Learning/Application Scoring: Complete the skill application score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-15 for Standard 4 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide information to the students about the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Does the curriculum provide one opportunity or activity for students to practice the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide more than one opportunity or activity for students to practice the skills needed to meet this standard? (If yes, also check yes for #2 above.)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Does the curriculum provide opportunities for students to assess their own skill progress, such as personal check lists?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Student Skill Learning and Application Score (total number of "yes" checks) ☐

Transfer this score to Standard 4: Communication Skills (see Student Learning/Application line) on the Overall Summary Form - Chap. 3.

Teacher Instruction and Skill Assessment Scoring: Complete the skill instruction and assessment score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-15 for Standard 4 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide guidance to help the teacher understand the steps required to learn and teach the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Does the curriculum provide guidance for the teacher to model the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide strategies for the teacher to assess the student's ability to perform the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Are clear assessment standards provided for the teachers, such as a rubric or check sheet that explains the criteria that need to be met to demonstrate the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Teacher Instruction and Assessment Score (total number of "yes" checks) ☐

Transfer this score to Standard 4: Communication Skills (see Teacher Instruction/Assessment line) on the Overall Summary Form - Chap. 3.

Notes:

HECAT: Promoting Healthy Eating
HE - 14
Healthy Eating

Standard 4: Sub-Skills and Skill Examples

**Standard**

**Skill Examples**

After implementing this curriculum, students will be able to use interpersonal communication skills to avoid or reduce unhealthy eating practices and to enhance healthy eating.

**Sub-Skills**

As a result of using this curriculum, students will be able to:

- Use effective interpersonal skills with family, friends, and others.
- Resist pressure from peers to engage in unhealthy behaviors.
- Effectively negotiate to avoid or reduce personal health risks.
- Communicate empathy and support for others.
- Effectively manage interpersonal conflicts.
- Ask for assistance to enhance personal health and health of others.

Base the curriculum score on its ability to meet the entire standard — not just a few sub-skills for this standard.

**Skill Examples**

Below are examples that illustrate how a curriculum might address these skills. These examples are not intended to be a complete list of all the ways these skills can be addressed. When considering other examples, it is useful to think about the sub-skills in relation to the concepts emphasized in Standard 1. Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise skills or skill examples to reflect community needs and to conform to the curriculum requirements of the school district.

<table>
<thead>
<tr>
<th>Grades Pre-K-2</th>
<th>Grades 3-5</th>
<th>Grades 6-8</th>
<th>Grades 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate how to politely refuse less nutritious foods.</td>
<td>Demonstrate how to politely refuse less nutritious foods.</td>
<td>Demonstrate how to politely refuse less nutritious foods.</td>
<td>Demonstrate interpersonal skills to help deal with negative peer influences on healthy eating.</td>
</tr>
<tr>
<td>Demonstrate how to politely request foods that are more nutritious.</td>
<td>Demonstrate how to politely request foods that are more nutritious.</td>
<td>Summarize how to politely request foods that are more nutritious.</td>
<td>Demonstrate how to politely refuse less nutritious foods.</td>
</tr>
<tr>
<td>Demonstrate how to refuse foods that cause an allergic reaction.</td>
<td>Demonstrate how to refuse foods that cause an allergic reaction.</td>
<td>Demonstrate how to make a special request, related to healthy food preparation.</td>
<td>Demonstrate how to politely request foods that are more nutritious.</td>
</tr>
<tr>
<td>Demonstrate interpersonal skills for dealing with peer influence to eat less nutritious foods.</td>
<td>Demonstrate interpersonal skills for dealing with peer influence to eat less nutritious foods.</td>
<td>Discuss plans to maintain healthy eating habits with parents and friends.</td>
<td>Demonstrate how to make a special request, related to healthy food preparation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Discuss plans to maintain healthy eating habits with parents and friends.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Demonstrate negotiation skills for dealing with pressure to eat less nutritious foods.</td>
</tr>
</tbody>
</table>

HECAT: Promoting Healthy Eating
HE - 15
Healthy Eating

Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Student Skill Learning/Application Scoring: Complete the skill application score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-17 for Standard 5 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide information to the students about the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Does the curriculum provide one opportunity or activity for students to practice the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide more than one opportunity or activity for students to practice the skills needed to meet this standard? (If yes, also check yes for #2 above.)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Does the curriculum provide opportunities for students to assess their own skill progress, such as personal check lists?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Student Skill Learning and Application Score (total number of "yes" checks) ☐

Transfer this score to Standard 5: Decision Making (see Student Learning/Application line) on the Overall Summary Form - Chap. 3.

Teacher Instruction and Skill Assessment Scoring: Complete the skill instruction and assessment score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-17 for Standard 5 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Yes</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide guidance to help the teacher understand the steps required to learn and teach the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
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<tr>
<td>3. Does the curriculum provide strategies for the teacher to assess the student’s ability to perform the skills needed to meet this standard?</td>
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<td>☐</td>
</tr>
<tr>
<td>4. Are clear assessment standards provided for the teachers, such as a rubric or check sheet that explains the criteria that need to be met to demonstrate the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Teacher Instruction and Assessment Score (total number of "yes" checks) ☐

Transfer this score to Standard 5: Decision Making (see Teacher Instruction/Assessment line) on the Overall Summary Form - Chap. 3.

Notes:

HECAT: Promoting Healthy Eating
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Healthy Eating

Standard 5: Skill Examples

After implementing this curriculum, students will be able to demonstrate the ability to use decision-making skills to avoid unhealthy foods and beverages and choose healthy foods and beverages.

**Sub-Skills:** As a result of using this curriculum, students will be able to
- Determine when health-related situations require the application of a thoughtful decision-making process.
- Generate alternatives to health-related issues or problems.
- Determine barriers that can hinder healthy decision making.
- Predict the short and long-term consequences of each alternative on self and others.
- Choose healthy alternatives over unhealthy alternatives.
- Evaluate the outcomes of a health-related decision.

Base the curriculum score on its ability to meet the entire standard — not just a few sub-skills for this standard.

**Skill Examples:** Below are examples that illustrate how a curriculum might address these skills. These examples are not intended to be a complete list of all the ways these skills can be addressed. When considering other examples, it is useful to think about the sub-skills in relation to the concepts emphasized in Standard 1. Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise skills or skill examples to reflect community needs and to conform to the curriculum requirements of the school district.

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<th>Grades 6–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Choose healthy foods and beverages instead of less healthy foods and beverages.</td>
<td>- Choose healthy foods and beverages instead of less healthy foods and beverages.</td>
<td>- Choose healthy food and beverages instead of less healthy foods and beverages.</td>
<td>- Choose healthy foods and beverages over less healthy foods and beverages.</td>
</tr>
<tr>
<td>- Demonstrate the ability to select healthy from unhealthy foods on a fast food restaurant menu.</td>
<td>- Demonstrate the ability to select healthy from unhealthy foods on a fast food restaurant menu.</td>
<td>- Demonstrate the ability to select healthy from unhealthy foods.</td>
<td>- Summarize positive outcomes from choosing healthy foods.</td>
</tr>
<tr>
<td>- Describe positive outcomes from choosing healthy foods.</td>
<td>- Describe positive outcomes from choosing healthy foods.</td>
<td>- Describe the consequences of an unhealthy diet.</td>
<td>- Demonstrate the ability to select healthy from unhealthy foods on a fast food restaurant menu.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Analyze the consequences of an unhealthy diet.</td>
</tr>
</tbody>
</table>

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HECAT: Promoting Healthy Eating
HE - 17
Healthy Eating

**Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.**

**Student Skill Learning/Application Scoring:** Complete the skill application score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-19 for Standard 6 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide information to the students about the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>skills needed to meet this standard?</td>
<td></td>
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<tr>
<td>2. Does the curriculum provide one opportunity or activity for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>students to practice the skills needed to meet this standard?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Does the curriculum provide more than one opportunity or activity</td>
<td></td>
<td></td>
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<tr>
<td>for students to practice the skills needed to meet this standard?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(if yes, also check yes for #2 above.)</td>
<td></td>
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</tr>
<tr>
<td>4. Does the curriculum provide opportunities for students to assess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>their own skill progress, such as personal check lists?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Student Skill Learning and Application Score (total number of "yes" checks) [ ]**

Transfer this score to Standard 6: Goal Setting (see Student Learning/Application line) on the Overall Summary Form - Chap. 3.

**Teacher Instruction and Skill Assessment Scoring:** Complete the skill instruction and assessment score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-19 for Standard 6 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Does the curriculum provide guidance to help the teacher understand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the steps required to learn and teach the skills needed to meet this</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standard?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Does the curriculum provide guidance for the teacher to model the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>skills needed to meet this standard?</td>
<td></td>
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</tr>
<tr>
<td>3. Does the curriculum provide strategies for the teacher to assess the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>student’s ability to perform the skills needed to meet this standard?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are clear assessment standards provided for the teachers, such as</td>
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<td></td>
</tr>
<tr>
<td>a rubric or check sheet that explains the criteria that need to be</td>
<td></td>
<td></td>
</tr>
<tr>
<td>met to demonstrate the skills needed to meet this standard?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Teacher Instruction and Assessment Score (total number of “yes” checks) [ ]**

Transfer this score to Standard 6: Goal Setting (see Teacher Instruction/Assessment line) on the Overall Summary Form - Chap. 3.

**Notes:**
Standard 6: Skill Examples

After implementing this curriculum, students will be able to demonstrate the ability to set personal goals related to healthy eating, take steps to achieve these goals, and monitor their progress in achieving them.

**Sub-Skills:** As a result of using this curriculum, students will be able to
- Assess personal health practices and status.
- Develop a goal to adopt, maintain, or improve a personal health practice.
- Plan strategies for performing health-enhancing practices.
- Make a commitment to improve health.
- Overcome barriers to action.
- Monitor progress in achieving desired health practices and outcomes.
- Measure accomplishment in meeting health outcomes.

Base the curriculum score on its ability to meet the entire standard — not just a few sub-skills for this standard.

**Skill Examples:** Below are examples that illustrate how a curriculum might address these skills. These examples are not intended to be a complete list of all the ways these skills can be addressed. When considering other examples, it is useful to think about the sub-skills in relation to the concepts emphasized in Standard 1. Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise skills or skill examples to reflect community needs and to conform to the curriculum requirements of the school district.

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<th>Grades 6–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set a goal to eat more fruits and vegetables.</td>
<td>Assess the strengths and weaknesses of personal diet.</td>
<td>Assess food intake in relation to established food groups.</td>
<td>Evaluate food intake in relation to the Dietary Guidelines for Americans.</td>
</tr>
<tr>
<td>Describe ways that parents and other trusted adults can help meet a goal of eating more fruits and vegetables.</td>
<td>Set a goal to improve food choices.</td>
<td>Set a goal to improve one’s personal food choices that leads to a healthier diet.</td>
<td>Set a goal to improve one’s personal food choices that leads to a healthier diet.</td>
</tr>
<tr>
<td>Demonstrate the ability to keep track of foods and beverages consumed.</td>
<td>Make a personal commitment to improve food choices.</td>
<td>Design a plan for improving a healthier diet.</td>
<td>Establish an appropriate goal to manage weight.</td>
</tr>
<tr>
<td>Monitor progress toward meeting the goal of improving food choices.</td>
<td>Demonstrate the ability to keep track of foods and beverages consumed.</td>
<td>Make a personal commitment to achieving a healthier diet.</td>
<td>Design a plan for achieving a healthier diet and managing weight.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop strategies for overcoming barriers to achieving a healthier diet.</td>
<td>Make a personal commitment to achieving a healthier diet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monitor progress toward achieving a healthier diet goal.</td>
<td>Choose strategies for overcoming the barriers to achieving a healthier diet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monitor progress toward achieving a healthier diet goal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Identify how a healthy or unhealthy diet can affect plans for the future.</td>
</tr>
</tbody>
</table>

HECAT: Promoting Healthy Eating
HE - 19
Healthy Eating

Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Student Skill Learning/Application Scoring: Complete the skill application score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See pages HE-21 and HE-22 for Standard 7 sub-skills and skill examples.

<table>
<thead>
<tr>
<th>Criteria</th>
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<td>2. Does the curriculum provide one opportunity or activity for students to practice the skills needed to meet this standard?</td>
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<td>3. Does the curriculum provide more than one opportunity or activity for students to practice the skills needed to meet this standard? (If yes, also check yes for #2 above.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Does the curriculum provide opportunities for students to assess their own skill progress, such as personal check lists?</td>
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<td></td>
</tr>
</tbody>
</table>

Student Skill Learning and Application Score (total number of "yes" checks)  
Transfer this score to Standard 7: Practicing Healthy Behaviors (see Student Learning/Application line) on the Overall Summary Form - Chap. 3.

Teacher Instruction and Skill Assessment Scoring: Complete the skill instruction and assessment score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See pages HE-21 and HE-22 for Standard 7 sub-skills and skill examples.

<table>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. Does the curriculum provide strategies for the teacher to assess the student's ability to perform the skills needed to meet this standard?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are clear assessment standards provided for the teachers, such as a rubric or check sheet that explains the criteria that need to be met to demonstrate the skills needed to meet this standard?</td>
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Teacher Instruction and Assessment Score (total number of "yes" checks)  
Transfer this score to Standard 7: Practicing Healthy Behaviors (see Teacher Instruction/Assessment line) on the Overall Summary Form - Chap. 3.

Notes:
Healthy Eating

Standard 7: Skill Examples

After implementing this curriculum, students will be able to demonstrate strategies to improve or maintain healthy eating patterns.

**Sub-Skills:** As a result of using this curriculum, students will be able to
- Express intentions to engage in health-enhancing behaviors.
- Perform healthy practices.
- Avoid health risks.
- Take responsibility for personal health.

Base the curriculum score on its ability to meet the entire standard — not just a few sub-skills for this standard.

**Skill Examples:** Below are examples that illustrate how a curriculum might address these skills. These examples are not intended to be a complete list of all the ways these skills can be addressed. When considering other examples, it is useful to think about the sub-skills in relation to the concepts emphasized in Standard 1. Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise skills or skill examples to reflect community needs and to conform to the curriculum requirements of the school district.

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<th>Grades 3-5</th>
<th>Grades 6-8</th>
<th>Grades 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Choose a variety of healthy snacks.</td>
<td>• Choose healthy snacks in appropriate portion sizes.</td>
<td>• Choose healthy foods in appropriate portion sizes.</td>
<td>• Choose healthy foods in appropriate portion sizes.</td>
</tr>
<tr>
<td>• Express intentions to eat breakfast every day.</td>
<td>• Plan and prepare a healthy snack.</td>
<td>• Plan and prepare a healthy snack.</td>
<td>• Choose healthier foods at restaurants.</td>
</tr>
<tr>
<td>• Express intentions to drink plenty of water every day.</td>
<td>• Choose a variety of nutritious breakfast foods.</td>
<td>• Develop strategies for making healthier choices at restaurants.</td>
<td>• Plan and prepare nutritious breakfasts.</td>
</tr>
<tr>
<td>• Express intentions to eat a variety of nutritious foods every day.</td>
<td>• Identify ways a person can eat more fruits and vegetables.</td>
<td>• Plan and prepare nutritious breakfasts.</td>
<td>• Describe strategies for eating more fruits and vegetables.</td>
</tr>
<tr>
<td>• Express the intention to eat fruits and vegetables every day.</td>
<td>• Identify ways a person can drink more water and nutritious beverages.</td>
<td>• Describe strategies for drinking an appropriate amount of water and nutritious beverages.</td>
<td>• Describe strategies for increasing intake of fiber.</td>
</tr>
<tr>
<td>• Develop strategies for making healthier choices at restaurants.</td>
<td>• Identify ways a person can eat less fat.</td>
<td>• Describe strategies a person can use to reduce the amount of fat consumed.</td>
<td>• Describe substitutions a person can make to reduce the amount of fat consumed.</td>
</tr>
</tbody>
</table>

Additional examples for Standard 7 are listed on the next page.
Healthy Eating

Standard 7: Skill Examples (continued)

After implementing this curriculum, students will be able to demonstrate strategies to improve or maintain healthy eating patterns.

<table>
<thead>
<tr>
<th>Grades Pre-K-2</th>
<th>Grades 3–5</th>
<th>Grades 6–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identify ways a person can keep from overeating.</td>
<td>• Describe strategies a person can use to reduce the amount of sugar consumed.</td>
<td>• Describe strategies for reducing the amount of sugar consumed.</td>
<td>• Describe strategies for reducing the amount of sugar consumed.</td>
</tr>
<tr>
<td>• Plan a meal based on the food groups.</td>
<td>• Describe strategies a person can use to keep from overeating.</td>
<td>• Describe strategies a person can use to keep from overeating.</td>
<td>• Describe strategies a person can use to keep from overeating.</td>
</tr>
<tr>
<td>• Express the intention to eat a variety of nutritious foods daily.</td>
<td>• Plan a day’s meals based on all of the food groups.</td>
<td>• Plan a week’s meals based on the Dietary Guidelines for Americans.</td>
<td>• Plan a week’s meals based on the Dietary Guidelines for Americans.</td>
</tr>
<tr>
<td>• Describe the importance of assuming personal responsibility for healthy eating.</td>
<td>• Summarize the importance of assuming personal responsibility for healthy eating.</td>
<td>• Demonstrate ways to take responsibility for healthy eating.</td>
<td>• Demonstrate ways to take responsibility for healthy eating.</td>
</tr>
<tr>
<td>• Demonstrate safe food handling and storage practices.</td>
<td>• Express the intention to eat a variety of nutritious foods in moderation.</td>
<td>• Express the intention to eat a variety of nutritive foods in moderation.</td>
<td>• Express the intention to eat a variety of nutritive foods in moderation.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate safe food handling, preparation, and storage practices.</td>
<td>• Demonstrate how to keep food safe and prevent food-borne illness.</td>
<td>• Demonstrate how to keep food safe and prevent food-borne illness.</td>
</tr>
</tbody>
</table>
Healthy Eating

Standard 7: Sub-Skills and Skill Examples

Notes:
Healthy Eating

**Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.**

*Student Skill Learning/Application Scoring: Complete the skill application score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-25 for Standard 8 sub-skills and skill examples.*

<table>
<thead>
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<tbody>
<tr>
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<tr>
<td>2. Does the curriculum provide one opportunity or activity for students to practice the skills needed to meet this standard?</td>
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<td>3. Does the curriculum provide more than one opportunity or activity for students to practice the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>(If yes, also check yes for #2 above.)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Does the curriculum provide opportunities for students to assess their own skill progress, such as personal check lists?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Student Skill Learning and Application Score (total number of "yes" checks) ☐**

Transfer this score to Standard 8: Advocating for Health (see Student Learning/Application line) on the Overall Summary Form - Chap. 3.

*Teacher Instruction and Skill Assessment Scoring: Complete the skill instruction and assessment score by checking the appropriate "yes" or "no" box for each criteria and summing the "yes" checks. See page HE-25 for Standard 8 sub-skills and skill examples.*

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<tbody>
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</tr>
<tr>
<td>2. Does the curriculum provide guidance for the teacher to model the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Does the curriculum provide strategies for the teacher to assess the student's ability to perform the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Are clear assessment standards provided for the teachers, such as a rubric or check sheet that explains the criteria that need to be met to demonstrate the skills needed to meet this standard?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Teacher Instruction and Assessment Score (total number of "yes" checks) ☐**

Transfer this score to Standard 8: Advocating for Health (see Teacher Instruction/Assessment line) on the Overall Summary Form - Chap. 3.

**Notes:**

---

HECAT: Promoting Healthy Eating

HE - 24
**Healthy Eating**

**Standard 8: Sub-Skills and Skill Examples**

**Skill Examples**

After implementing this curriculum, students will be able to demonstrate the ability to influence and support others to make healthy eating choices.

**Sub-Skills**: As a result of using this curriculum, students will be able to

- Declare positive beliefs about health-enhancing practices.
- Educate others about health-enhancing practices.
- Influence positive health practices of others.
- Promote health-enhancing societal norms.
- Influence and support others to make positive health choices.

Base the curriculum score on its ability to meet the entire standard — not just a few sub-skills for this standard.

**Skill Examples**: Below are examples that illustrate how a curriculum might address these skills.

These examples are not intended to be a complete list of all the ways these skills can be addressed. When considering other examples, it is useful to think about the sub-skills in relation to the concepts emphasized in Standard 1. Remember, the HECAT is designed to guide the analysis of curricula for local use. Users are encouraged to add, delete, or revise skills or skill examples to reflect community needs and to conform to the curriculum requirements of the school district.

<table>
<thead>
<tr>
<th>Grades Pre-K–2</th>
<th>Grades 3–5</th>
<th>Grades 6–8</th>
<th>Grades 9–12</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ask parents, guardians, and other caretakers to offer more nutritious food choices at home.</td>
<td>• Explain to others why healthy eating is important.</td>
<td>• Advocate to others about how healthy eating enhances personal health and wellness.</td>
<td>• Negotiate with parents or guardians for healthy food choices at home and at restaurants.</td>
</tr>
<tr>
<td>• Encourage parents, guardians, and other caretakers to make healthy eating choices.</td>
<td>• Persuade parents or guardians to offer more nutritious food choices at home.</td>
<td>• Negotiate with parents or guardians for healthy food choices at home and at restaurants.</td>
<td>• Advocate for healthy eating choices at school and in the community.</td>
</tr>
<tr>
<td>• Provide support to peers for choosing healthy foods.</td>
<td>• Provide support to peers and family members for choosing healthy foods.</td>
<td>• Advocate for healthy and appealing food choices at school.</td>
<td>• Advocate to community leaders for programs that can provide nutritious foods (e.g., food banks).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Educate family and peers to choose healthy foods.</td>
<td>• Educate family and peers to manage weight in healthy ways.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provide support to peers for choosing healthy foods.</td>
<td>• Demonstrate ways to advocate for friends and family members who need support and treatment for eating disorders.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Advocate that others properly prepare and handle food.</td>
<td>• Advocate for proper food preparation and handling in the school and community.</td>
</tr>
</tbody>
</table>
Healthy Eating

This concludes the health education curriculum analysis items related to healthy eating. Complete the Overall Summary Form and use the scores and notes to inform group discussions and curriculum decisions.

Additional Notes:
APPENDIX D

INSTRUMENT
### School Food Service Directors: Policy, Practice and Perceptions

**Directions:**
The following statements pertain to policies and practices in your school district. Please place an X in the box that most closely reflects activities in your school district.

There are no right or wrong answers. Your responses are completely confidential and will be seen only by the researcher.

0 = Not in Place (NIP)  
1 = Under Development (UD)  
2 = Partially in Place (PIP)  
3 = Fully in Place (FIP)

<table>
<thead>
<tr>
<th>The following statements pertain to policies in your district.</th>
<th>NIP</th>
<th>UD</th>
<th>PIP</th>
<th>FIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Policies in our school district ban food as a reward or punishment for students.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2 Our district policies regarding fundraising are supportive of healthy eating.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3 Our district has policies that restrict access to foods of minimal nutritional value.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4 Our district has policies that restrict access to foods of low nutritional value.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5 Our district has policies, which require the teaching of healthy eating principles.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6 Our district policies encourage students to wash hands before eating.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The following statements pertain to practices in your district.</th>
<th>NIP</th>
<th>UD</th>
<th>PIP</th>
<th>FIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Our district provides a lunch program.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9 Our district provides a breakfast program.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10 Our district provides a variety of healthy foods in our school meals on a daily basis.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11 Our district provides low-fat or skim milk to the students.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12 Our district purchases foods to follow low-fat guidelines.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13 Our district prepares foods to follow low-fat guidelines.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14 A la carte offerings are low-fat and appealing to children.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15 Sites outside the cafeteria offer low-fat, appealing items (snack bar, vending, etc.).</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16 Our district encourages students to make healthy food and beverage choices</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

0 = Not in Place (NIP)  
1 = Under Development (UD)  
2 = Partially in Place (PIP)  
3 = Fully in Place (FIP)

<p>| 17 Our district provides at least 20 minutes for children to eat a meal. | 0   | 1  | 2   | 3   |
| 18 Our district cafeterias are safe. | 0   | 1  | 2   | 3   |
| 19 Our cafeterias are pleasant. | 0   | 1  | 2   | 3   |
| 20 Our district is prepared to respond to food emergencies. (ex. my school is prepared to help with a community food or water crisis). | 0   | 1  | 2   | 3   |</p>
<table>
<thead>
<tr>
<th>These statements pertain to working with others.</th>
<th>NIP</th>
<th>UD</th>
<th>PIP</th>
<th>FIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 Teachers and food service staff work together to promote nutrition education to students</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22 Our district has a program for staff/faculty members to learn healthy eating habits.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23 Our district has a program for the staff/faculty members to learn weight management.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24 Our district has a program that requires family input into school meals planning.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25 Our district has a program that requires student input into school meals planning.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26 My district provides workshop/training opportunities for the Food Service Manager.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27 My school district provides me with formal instruction about childhood obesity prevention.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<p>| These statements refer to your work as it is involved in the development and implementation of nutrition policy and practice in your school district. |
|SA=Strongly Agree  | A= Agree    | U= Unsure | D=Disagree  | SD= Strongly Disagree |</p>
<table>
<thead>
<tr>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 At work, when facing difficult tasks, I am certain that I will accomplish them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29 At work, I believe I can succeed at most any task to which I set my mind.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30 At work, I am confident that I can perform effectively on many different tasks.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<p>| The following statements measure your perceptions as a Food Service Manager. |
|---|---|---|---|---|---|</p>
<table>
<thead>
<tr>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 In my school, part of my job description is to teach students about healthy eating.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32 In my school, a nutritionally sound menu is provided.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33 I believe that nutrition policies and nutrition education in schools will help reduce childhood obesity.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34 I believe that nutrition policies and nutrition education in schools will help reduce future disease in children.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35 Implementing comprehensive nutrition policies in my school district will be easily accomplished.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36 Implementing comprehensive nutrition education in my school district was/will be easily accomplished.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Please check the appropriate box:

37. Implementing comprehensive nutrition policies in my district has been difficult.

_____ Yes  _____ No

If No, please answer question 38. If Yes, skip to question 39.

38. Maintaining comprehensive nutrition policies in my district has been difficult.

_____ Yes  _____ No

Please rank the following:

39. Implementing comprehensive nutrition policies and practices at my school is difficult due to: (Rank from 1 to 6 with 1=most difficult to 6=least difficult)

_____ I don’t have support of administration  _____ I don’t have parental support

_____ I don’t have time  _____ I have a hard time coordinating with teacher

_____ I don’t have funds to do it  _____ I don’t have the skills/training

40. How likely is it that you are involved in the development of nutrition policies in your school?

_____ Extremely Unlikely  _____ Unlikely  _____ Somewhat Likely  _____ Likely  _____ Extremely Likely

Background Information (Please X an answer for each question). Please respond to these questions as they pertain to your position as District Food Service Manager.

41. Sex:  _____ Male  _____ Female

42. Age:  ______(Please write in)

43. Qualifications: I have (please check all that apply)

_____ An Associate’s degree in nutrition or related field

_____ A bachelor’s degree in a nutrition or related field

_____ Master’s degree in nutrition or related field

_____ None of the above

44. Certification(s) held. (Please check all that apply).

_____ Certification/Credentialing in food service from SNA(School Nutrition Association) or my state’s program that requires continuing education to maintain

_____ CDM (Certified Dietary Manager)  _____ Culinary Certificate

_____ CFPP (Certified Food Protection Professional)  _____ LD (Licensed Dietitian)

_____ RD (Registered Dietitian)  _____ None of the above

45. Number of years employed as a Food Service Director: (Check one)

_____ 0-5 years  _____ 6-10 years  _____ 11-15 years  _____ 16-20 years  _____ 20+ years

46. Number of hours worked each week on average in 2008-2009 (as School Food Service Director): (Fill in number)  ______ hours
47. **Salary Level**: (Check one)
   - _____Less than $10,000 per year
   - _____$21,000 to $39,999
   - _____$60,000 or more
   - _____$10,000 to $20,999 per year
   - _____$40,000 to $59,999

48. **My school is** (Check one)  
   - _____Urban/City  
   - _____Suburban  
   - _____Rural

49. **Are you currently on your school’s health and/or wellness committee?** (Check one)
   - _____Yes  
   - _____No  
   - _____My school has no health/wellness committee

50. **What types of nutrition education activities do you perform?** (Please check all that apply).
   - _____Educational Handouts  
   - _____Nutrition “theme” days in cafeteria
   - _____Classroom programs  
   - _____Teacher/Staff education  
   - _____Other (Please specify)  
   - _____None of the above  
   - _____Parent education

51. **I am employed by**: (Check one)  
   - _____the school  
   - _____a foodservice company (ex. Aramark)
APPENDIX E

PERMISSION TO USE GENERAL SELF-EFFICACY MODULE
Jeanine,

You have my permission to use the NGSE.

Good luck,

Gilad

Gilad Chen
Associate Professor of Management & Organization
Associate Editor, Journal of Applied Psychology
Robert H. Smith School of Business
4514 Van Munching Hall
University of Maryland
College Park, MD 20742-1815
301-405-6923 TEL
301-920-4521 MOBILE
gcheden@rhsmith.umd.edu

http://www.rhsmith.umd.edu----Original Message-----
From: Jeanine Mincer (mailto:jmincerer@ysu.edu)
Sent: Wednesday, May 20, 2009 12:16 PM
To: gcheden@rhsmith.umd.edu
Subject: Request Permission

https://my.ysu.edu/cp/email/message?msgid=73dbf13b3a8b12dc5641801fa5b91c3d-3.5NYoungsi... 4/23/2010
APPENDIX F

THANK YOU CARD AND COVER LETTER
September 30, 2009

Dear [Name],

Enclosed, you will find a questionnaire pertaining to your duties as a school food service director. This survey is part of a study being conducted for a doctoral dissertation at Kent State University in Kent, Ohio. Your participation is strictly voluntary and you will not be penalized in any way if you choose not to participate. Your cooperation, however, is greatly appreciated.

The title of the project is "An Analysis of the Impact of the Public School District Food Service Director on the Development and Implementation of Food-related Policies and Practices". Its purpose is to explore the level of involvement and familiarity with the school food policy and practice, and to explore the level of empowerment felt by School Food Service Directors in regards to this policy and the perceived barriers to involvement.

Your responses will be completely confidential and will be seen only by the researcher. There will be no attempt to match responses to respondents. You may refuse to participate or stop participating at any time without being subject to any type of penalty. All surveys will be kept in a locked file in the office of the researcher's advisor, Dr. Cindy Symons, in Room 306 White Hall, Kent State University, Kent, Ohio.

By returning the questionnaire, you are giving consent to participate in the study. Results of the study will be available by emailing me at jmhesch@gmail.com.

If you have any questions regarding this project, please feel free to contact John West at Kent State University (330-672-2704) or me at the following:

c/o Human Ecology Department
Youngstown State University
One University Plaza
Youngstown, Ohio 44555
330-941-3146

Thank you in advance for your help. It is greatly appreciated.

Adult Counseling, Health, and Vocational Education
330-672-2705 • Fax: 330-672-3063 • http://www.ohio.kent.edu/ahve
Dear Food Service Director,

You have recently received the “School Food Service Directors: Policy, Practice and Perceptions” questionnaire in the mail. Please complete and return the questionnaire as soon as possible using the pre-addressed and stamped envelope enclosed with the questionnaire.

Thank you very much for your help with this important study.

Sincerely,

Jeanine L. Mincher
Instructor
Youngstown State University
One University Plaza
Youngstown, Ohio 44555
September 30, 2009

Dear [Name],

Enclosed, you will find a questionnaire pertaining to your duties as a school food service district director. This survey is part of a study being conducted for a doctoral dissertation at Kent State University in Kent, Ohio. Your participation is strictly voluntary and you will not be penalized in any way if you choose not to participate. Your cooperation, however, is greatly appreciated.

The title of the project is "An Analysis of the impact of the Public School District Food Service Director on the Development and Implementation of food-related Policies and Practices". Its purpose is to explore the level of involvement and familiarity with the school food policy and practices, and to explore the level of empowerment felt by School Food Service Directors in regards to this policy and the perceived barriers to involvement.

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All surveys will be kept in a locked file in the office of the researcher's advisor, Dr. Cindy Synova, in Room 316 White Hall, Kent State University, Kent, Ohio.

By returning this questionnaire, you are giving consent to participate in the study. Results of the study will be available by request by emailing me at [researcher@ysu.edu].

If you have any questions regarding this project, please feel free to contact John West at Kent State University (330-672-2304) or me at the following:

70 Human Ecology Department
Youngstown State University
One University Plaza
Youngstown, Ohio 44555
330-941-3746

Thank you in advance for your help. It is greatly appreciated.

Jeanine Mincher, M.S. in Ed., R.D., L.D.
Doctoral Candidate, Kent State University
APPENDIX G

IRB APPROVALS
September 26, 2008

Jeanne Mincher
ACRE

Re: 08-592: "An analysis of the impact of the public school district food service director on the development and implementation of food related policies and practices."

Dear Ms. Mincher,

I am pleased to inform you that the Kent State University Institutional Review Board reviewed and approved your project change requesting to mail your survey to local school food service district managers. This modification in recruitment procedure was approved on September 26, 2008.

HHS regulations and Kent State University Institutional Review Board guidelines require that any changes in research methodology, protocol design or principal investigator have the prior approval of the IRB before implementation and continuation of the protocol. The IRB further requests an annual progress report and a final report at the conclusion of the study.

Kent State University has a Federalwide Assurance on file with the Office for Human Research Protections (OHRP, FWA Number 00001853)

If you have any questions or concerns, please contact me at 330-672-2704 or tonya.frederick@kent.edu.

Sincerely,

Tonya Frederick, R.N. B.S.N.
Research Compliance Administrator

CC: Dr. Amy Thompson
August 5, 2008

Dr. Jeannine Mincher, Principal Investigator
Department of Human Ecology
UNIVERSITY

RE: HSRC PROTOCOL NUMBER: 07-2009

Dear Dr. Mincher,

The Human Subjects Research Committee of Youngstown State University has reviewed your response to their concerns regarding the above mentioned protocol and determined that your protocol now meets YSU Human Subjects Research Guidelines. Therefore, I am pleased to inform you that your project has been fully approved.

Please note that your project is approved for one year. If your project extends beyond one year, you must submit a project update form at that time.

Any changes in your research activity should be promptly reported to the Human Subjects Research Committee and may not be initiated without HSRC approval except where necessary to eliminate harm to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the Human Subjects Research Committee.

We wish you well in your study.

Sincerely,

[Signature]
Ferri J. Knestanzky
Associate Provost for Research
Research Compliance Officer

[Seal]
YOUNGSTOWN STATE UNIVERSITY
100 East Swede Street
Youngstown, Ohio 44555-3191

www.ysu.edu
YSU
REFERENCES
REFERENCES


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