2016

Fresh Fruits and Vegetables in a Rural Elementary School: A Mixed-Methods Program Evaluation

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COLLEGE OF EDUCATION

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2016

Abstract

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MPA, National University, 1984

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Doctoral Study Submitted in Partial Fulfillment

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Abstract

The Fresh Fruits and Vegetables Program is a federally funded program intended to increase public school students' fruit and vegetable consumption. The purpose of this mixed-method study was to evaluate the implementation of this program at a rural southwestern Title 1 elementary school to determine teacher perceptions of the program and whether the program met federal goals. Social ecological model and social cognitive theory grounded the investigation. The mixed method design included semi-structured interviews with 11 teachers accompanied by an anonymous web-based open response questionnaire and document reviews. Descriptive statistics were reported for Likert scale survey items and invoice documents to determine amount and variety of fruits and vegetables dispersed during the program. Interview data were open coded and analyzed for emergent themes. Teachers reported that the program initially provided a variety of produce, appropriate portions, and curriculum resources, which made the program a success. However, participants also noted that in the second and third years of implementation, their support for the program diminished due to declining quality, variety, and amounts of fruits and vegetables that negatively affected the achievement of program goals. Archival invoices supported these findings with decreased numbers of fruits and vegetables ordered in subsequent years. The findings were incorporated into an evaluation report for the local site. Implications for positive social change include providing the local administration with research-based findings on teachers' perceptions of the program, goal outcomes, and recommendations related to implementation at the local site.

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Dedication

I dedicate this writing to my family. First, my husband Jeffrey, thank you for your belief in me and your patience with my challenges, real or self-induced, for encouraging me to achieve this level of education. Secondly, to my mother, Willadeen, thank you for the example you have always set for me. Finally, to my sons and their families, thank you for allowing me to set this example for you.

Acknowledgments

Thank you Dr. Jenelle Braun-Monegan for your dedication, patience, and guidance along with your sage advice during this long and rigorous multi-year process. Dr. David A. Falvo, thank you for your invaluable insight, loyalty, and suggestions, during this long and rigorous multi-year process. Dr. Teresa Dillard your standards for excellence were greatly appreciated during my proposal phase. Dr. Jennifer Seymour your URR direction moved this project along during my final phase. To my WaldenWonderWomen, especially Katherine, you are invaluable. Walden employees including my academic advisor Mary Okada, Form & Style editor, Sarah Matthey, thank you for your support. Finally, thank you to the members of my circle of critical friends Lucy, Kelle, Patti, Mary, and Lin. My office staff of Beth, Mike, and Chris. Working with all of you encourages me to be a better student and makes me a better teacher.

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Section 1: The Problem

Introduction

Local elementary school students demonstrated unhealthy choices in nutrition and snack during the school day (L. Richardson, personal communication, January 16, 2016; C. Virostko, personal communication, February 20, 2015). Unhealthy snacks contain high calories, additives, preservatives, artificial colors, saturated fat, sugar, salt, and low fiber and nutrients (Centers for Disease Control, 2014; Maffeis et al., 2012). The Fresh Fruit and Vegetable Program (FFVP) through the United States Department of Agriculture (USDA) provided the option of fresh fruits and vegetables as a healthy snack. The local elementary school personnel participated in this program for 3 years (Clark County School District [CCSD], 2012; Nevada Department of Education [NDE], 2012). However, students brought unhealthy snacks and drinks from home (M. Schumacher, personal communication, November 22, 2011; S. Andrus, personal communication, August 31, 2012). These snacks included soft drinks in cans or bottles plus varieties of chips and candy (P. Gardner, personal communication, October 26, 2012; J. Call, personal communication, September 14, 2012).

Monosodium glutamate, sodium diacetate, sodium guanylate, and sodium inosinate are additives and preservatives frequently found in snacks and convenience foods (United States Department of Health and Human Services [HHS], 2014). Artificial colors such as FD&C Red #40 Lake, FD&C yellow #6 Lake, Yellow #5 and Yellow #6, along with Blue #1 are often added to processed foods, drinks, and condiments (Carrera, 2013; HHS, 2014). These colorings are used to maintain or enhance the appearance of the

food (American Nutrition Association, 2015; Rui et al., 2014). Researchers have found that these food additives overexcite individual brain cells and are known as excitotoxins (American Nutrition Association, 2015; Rui et al., 2014). Food colorings provoke food intolerance levels in some individuals, causing intolerances ranging from mild to severe - from simple feelings of discomfort and lightheadedness to vomiting or diarrhea (American Nutrition Association, 2015; Frensham et al., 2012). In children, food intolerance may produce symptoms as diverse as sleepiness, dizziness, anxiety, restlessness, gas, diarrhea or other discomforts (Carrera, 2013; Fischer, 2016). Regular consumption of these additives has resulted in adverse side effects including excessive body weight or obesity (American Nutrition Association, 2015; Rui et al., 2014). These additives affect the neurological pathways of the brain and disengage the "feeling full" function effecting weight gain (American Nutrition Association, 2015; Rui et al., 2014). Food colorings decrease motivation or activity in females yet increase movement or motility behaviors in males. Food colorings also decrease anxiety type behavior in both sexes (Kumbuc Doguc, Aylak, Kulac, & Gultekin, 2015).

The epidemic of childhood obesity, caused by poor diet and physical inactivity, results in an increased risk of 1 in every 3 children facing cancer, diabetes, and heart disease. These diseases create a monetary burden the U. S. health care system cannot bear (Centers for Disease Control and Prevention [CDC], 2014). Additionally, school-age girls are getting heavier. In the United States, girls are heavier than they were in the 1990s (Biro et al., 2013; Nemours, 2014). Typically, girls normally start puberty at the age of 9 (Biro et al., 2013; Nemours, 2014). Girls who are overweight or obese start puberty

sooner, about 8 years old. Other factors such as pesticides and plasticizers also add to precocious puberty with additional side effects (Nemours, 2014). The early onset of puberty in girls caused by obesity and overweight places them at additional risk for several cancers including breast cancer, diabetes, liver and kidney problems, and high blood pressure (Biro et al., 2013). These risks are preventable in children and adults who have learned how to live a healthy lifestyle and keep a healthy weight.

In this study, I explored the teachers' perceptions of the delivery, implementation, and effectiveness of the local FFVP in a program evaluation that contributed to creating a healthier local school student population. In this program evaluation examined the types of fruits and vegetables the local students experienced. In a review of teachers' perceptions of the program at the local elementary school, along with interviewing teachers and conducting an anonymous survey (Appendix G), I documented involvement and perceptions of the teachers with the local FFVP in reducing the students' destructive choices (CDC, 2014).

Definition of the Problem

Based upon informal and impromptu discussions, local educators indicated minimal knowledge about the FFVP. Additionally, teachers from the rural schools received little professional development regarding available lessons and resources obtainable through the program. Teacher quality, along with continued training, is a key factor in student achievement and improvement (Carpenter & Sherretz, 2012). Even so, the level of professional development known to be effective and the average training received by elementary school teachers was worth reviewing (Kleickmann, Tobst, Jonen,

Vehmeyer, & Moller, 2016). Teachers are acknowledged as the "critical leverage point" (Pianta, 2012, p. 2) for improving student learning outcomes including life skills. Overweight and obese students are at a higher risk for lower academic gains along with reduced self-esteem leading to social and psychological problems including eating disorders (Lim, Mayer-Brown, Clifford, & Janeke, 2014). Body mass index (BMI) calculations use weight and height as an indicator of body fatness for both children and teens. After the BMI is computed, that number is plotted on the CDC's BMI-for-age growth charts to determine a percentile ranking among children of the same sex and age showing the weight status categories of underweight, healthy, overweight, and obese. The overweight and obese categories correspond with the highest 15% of BMI calculations (CDC 2011a). An annual fitness test and BMI measurement of the 2012 fifth graders at the local elementary school showed a range of 44% to 51% of the fifth graders with a BMI range in the overweight to obese category (Human Kinetics, 2012).

Local teachers observed neighborhood students arriving at school eating highly processed, non-nutritional snack foods containing additives and preservatives that replaced a nutritious breakfast (H. Gentry, personal communication, November 21, 2012; L. Weinrich, personal communication, September 6, 2012). During lunch students pulled soft drinks and snacks along with processed and preserved foods from backpacks and lunch boxes (L. Colburn, personal communication, August 26, 2012, September 8, 2015). One frequent snack chip was Takis Fuego made in Mexico by Grupo Bimbo and distributed by Barcel USA. This hot chili pepper and lime flavored corn snack contains hydrogenated oil, known to contribute to high blood pressure, plus monosodium

glutamate, which is linked to brain damage, obesity, reproductive disorders, and behavior disorders (Truth in Labeling Campaign, 2012). Takis also contains sodium diacetate used as a fungicide and a bactericide registered to control mold and bacteria in stored grains and foods. Studies of sodium diacetate report the highest dose test animals experienced unhealthy reduction in body weight gain, loss of appetite, and reduction in food consumption (Peng, 2014). Disodium guanylate and disodium inosinate are additives known to work only with MSG for flavor enhancement with known side effects for younger children and people with asthma or gout (Wageningen University & Research Centre, 2012).

Along with snacks from home, students purchased snacks from the in-school snack bar. Frito Lay Flamin Hot Munchies, including baked Cheetos, are sold per district regulation. This approved snack contains monosodium glutamate, sodium diacetate, sodium guanylate, and sodium inosinate along with artificial food colorings. Whole pickles, sold as an alternative, contain 20% of recommended daily limit of sodium or 480 milligrams (CDC, 2011c). The district regulation for student wellness includes a directive that side or snack items should only contain 230 milligrams of sodium and a full entrée item served in the cafeteria may only contain sodium less than or equal to 480 milligrams. The wellness regulation also includes a statement that the district is committed to an environment where students have the opportunity to make healthy food choices (CCSD, 2015).

This unhealthy choice of food and snacks, nationwide, creates poor nutrition, which in turn influences the school children to produce negative behaviors and unhealthy

bodies (Lim, Mayer-Brown, Clifford, & Janeke, 2014). The consumption of preservatives and additives has provoked behavior problems and unsuccessful academic achievement in students susceptible to this chemicals (HHS, 2014). In 2011, at the local elementary school, Frieling (2011) related BMI to physical fitness testing and found that while the fifth graders were generally positive towards the testing, the passing rate of the physical fitness test was less than 63% of the entire fifth grade. More fast food and sugar-sweetened beverages are consumed by people in the Unites States now than has ever been consumed before. People eat out more frequently and spend less time involved with family meals. As a result of these changes, childhood obesity has soared (Fischer, 2016). The Federal Trade Commission (FTC, 2012) reported that convenience foods, prepared and processed, are inexpensive, accessible, and promoted to children between the ages of 12 to19 years old. Because of these poor eating habits, 13% of the daily caloric intake for those 12 to19 years old is delivered in sugar or sugar substitute-sweetened beverages rather than appropriate nutritional foods (Paul, Mogoi, & Velea, 2015). This unhealthy caloric intake places these students at risk for chronic diseases such as heart disease, diabetes, and cancer. With the nutritional emptiness of consumed beverages, deficiencies are also linked to scurvy, pellagra, rickets, and anemia (Paul et al., 2015). The students at this school reflected the national patterns of unhealthy eating patterns resulting in an obesity crisis.

In response to the nationally recognized health crisis (CDC, 2014), the local school district mandated that individual teachers, selected as school science site leaders (SSL's), communicate to all teachers the available resources in the revised health

curriculum. Motivation for this mandate is reflected in the health curriculum mission statement: “Enhancing student achievement by promoting knowledge and skills needed to make healthy choices through instructional time with teachers.” (CCSD, personal communication, November 11, 2012).

This revised health curriculum included sections on personal health, nutrition, and physical activity, along with environment and consumer health (CCSD, 2012). Personal health included factors that impact personal health behaviors, setting individual health goals, and examining consequences of those goals. The nutrition and physical activity section included nutritional information, meal planning, reading food labels, and applying health-related components of an active lifestyle to daily routines. Furthermore, this section included information on comparing nutrition and physical activities in diverse cultures. Finally, the environment/consumer health objectives included understanding media literacy when making responsible consumer health choices (CCSD, 2012).

Rationale

Evidence of the Problem at the Local Level

The students at the local elementary school, a rural southwestern Title 1 school in the nation’s fifth largest school district, were no exception to the effects linking nutrition and learning (CCSD, 2012; Frensham, Bryan, & Parletta, 2012; Maffeis et al., 2012). In a 2011 local master’s thesis fitness study of the 85 intermediate grade level students studied, 39% were overweight with an additional 12% categorized as obese (Frieling, 2011). Additionally, 37% of the students could not pass the physical fitness test (Frieling,

2011). The students' physical condition and physical performance mirrored the national patterns.

With the designation as a Title 1 school (Nevada Department of Education [NDE], 2010), based on the current 400 free and reduced lunch applications approved from a student population of approximately 500, student choices demonstrated a lack of food securities (Gunderson, 2015). Reduced or less availability of nutritionally safe or limited/uncertain ability to acquire nutritional food is known as food insecurity (Kahn, Pinckney, Keeney, Frankowski, & Carney, 2011). Students with food insecurities, regardless of economic status, regularly have less access to quality foods and less parental nutritional guidance. Academically, food insecure students demonstrate lower or failing grades, particularly in mathematics (Kahn et al., 2011). Students at the local elementary school demonstrated lower academic gains on state-mandated testing despite leveled interventions, supplemental tutoring, and nutritional programs (NDE 2011, 2012).

The school district's recently prioritized emphasis on the health curriculum, and a lack of available resources available only in the major metropolitan area, added to the problem at the local level. All district teachers were directed to teach the health curriculum, but not all teachers had the same resources to teach the objectives of the curriculum. Chefs for Kids trained volunteers to teach students about healthy foods that provide the greatest benefit to their bodies coupled with the importance of physical activity. This program is available in the metropolitan areas of the school district but not to the rural students such as in the local school studied (University of Nevada, Reno

[UNR], 2012). This lack of resources included the local teachers. Therefore, the lack of resources affected the rural students.

During the 2010-2011 school year, administrators at the local elementary school, recognized the lack of educational and nutritional support for the families and understood the link between learning and nutrition. They applied for and received grant funding for participation in the FFVP (H. Olivie, personal communication, August 23, 2010). The designation as a Title 1 school during the 2011-2012 school year enabled the FFVP grant to be renewed. The FFVP handbook includes a statement of goals that includes addressing childhood obesity by helping children learn more healthful eating habits (USDA, 2011).

Additionally, the goals of the FFVP were to

- Create healthier school environments by providing healthier food choices.
- Expand the types of fruits and vegetables the students' experience.
- Increase the consumption of fruits and vegetables by the students.
- Make a difference in children's diets to have an impact on their present and future health (USDA, 2011).

Teachers and administrators, working as a team, provided a framework for understanding the function of social systems within communities. Models of community partnerships showed that working within team strategies at this level reflected the climate and attitudes of community. These models also indicate marketing effects aimed towards development of a specific climate (CDC, 2011c; 2013). District and state policies supporting the local programs contribute to the success of the individual. Organizational

or institutional influences, such as schools, have codes to control populations. Setting physical activity and healthy food choices as important as academic activity, or rewarding physical prowess as well as mental ability within a school creates a sphere of influence including social networks, norms, and standards for groups, partnerships, and organizations (Williams, Wyatt, Williams, Logan, & Henley, 2015). District and state policies supporting the local programs contribute to the success of the individual. It is for the success of the individual local student that local administrators continue to apply for and qualify for the FFVP.

The local students developed eating and health habits, good or bad, that will persist into adulthood (UNR, 2012). Strong educational programs and physical activity practices decrease the burden of chronic diseases. However, local students had few programs or access to materials to learn the basic skills needed to make healthy lifelong choices. I recorded the teachers' perceptions of the delivery, implementation, and effectiveness of the local Fresh Fruits and Vegetables Program by interviewing and surveying teachers along with documenting available food choices through the program. I also chronicled involvement of the teachers with the implementation of the FFVP. By reducing the students' destructive choices, mirroring the public health crisis of one in every three children documented as overweight or obese, may have improved health education practices and professional development locally.

Poverty, Food Security, and the Local School

The National School Lunch Program that the local school qualified for provided lunches and the opportunity to practice skills learned in health nutritional education. The

local breakfast program was provided to promote readiness to learning and behaviors related to healthy eating. The Elementary and Secondary Education Act, under President Lyndon Johnson's administration, established Title 1 school designation to lessen the achievement gap separating food-secure advantaged students and food insecure or disadvantaged students (Ryu & Bartfield, 2012). Schools reporting at least a 40% enrollment of disadvantaged students qualify for Title 1 funds.

Children from local families with incomes varying from130 % and 185 % of the poverty level were eligible for reduced price meals. These students were charged no more than 40 cents per meal. From July 1, 2012 through June 30, 2013. 130 % poverty level for a family of four was $29,965; 185 % was $42,643. The 130 % income would equate to a fulltime employee with an hourly wage of less than 15 dollars an hour after taxes. The local elementary school had an enrollment with 80% of students applying and qualifying for free and reduced lunch, almost double what was needed to qualify for the federal program (NDE, 2011).

Evidence of the Problem from the Professional Literature

The Title 1 program attempts to provide extra support, academically, for low-income and disadvantaged students. The federal government allocates additional funding to qualified Title 1 schools to provide supplementary services for low-income children who need additional assistance to meet district and state academic standards (U. S. Department of Education [DOE], 2012). This supplemental support encompasses programs as well as tutoring programs from a variety of sources (DOE, 2012). Despite this assistance, the local school did not qualify for annual yearly progress (AYP).

However, during the second year of the FFVP, AYP was achieved (NDE, 2011). Additionally, the school was designated as a three-star school, showing increased student academic gains in math, reading, and science (CCSD, 2012).

The reduction of obesity and improvement of diet and nutrition choices is one of the guiding objectives for educators world-wide (CCSD, 2011; MacCann & Roberts, 2013; Tarasuk et al., 2015). School district personnel are critical in assuming the responsibility of improving the dietary knowledge and physical activity of students. The CDC (2011c) stated that school personnel are the main catalyst to create a supportive environment for students' efforts to eat healthy and to be active. Providing these opportunities along with options to learn about and practice healthy behaviors and positive choices are objectives supported by the CDC. Additionally, the traditional scheduling of lunch before recess, along with the reduction in the overall amount of time for recess, has been linked with forcing students to choose between essential healthy eating or essential healthy activity. Patt (2011) "Everyday millions of schoolchildren throw away their half-eaten cafeteria lunches so they can run outside and play" (p. 66). Children are expected to chose between eating or exercise.

The quality of diet is based on income. Paul, et al., (2015) showed that diet quality follows social and economic lines. Higher-quality diets are associated with greater affluence while persons of lower economic status consume lower nutrient diets (Paul et al. 2015). Furthermore, nutrition and diet directly affect obesity, diabetes, cardiovascular disease, dental concerns, and multiple forms of cancer (CDC, 2011b). Age, sex, occupation, income, and education all affect nutrition, diet, and health (CDC, 2011b).

Socioeconomic levels and location of housing and homes directly affect access to nutrient rich foods (CDC, 2011b). A healthy diet can be influenced by levels of income and social status.

The obesity epidemic is occurring not only in the United States but throughout other developed nations as well. The World Health Organization called for monitoring and surveillance in the implementation of international strategies for healthy children becoming healthy adults (as cited in Mooney, 2012). Canada's British Columbia, acknowledged the dangers of obesity and the risk factors in Canadian youth and encouraged Action Schools! BC – Healthy Eating, a school-based intervention program effecting change in the consumption of fruits and vegetables, along with students' knowledge, attitudes, and perceptions of fruits and vegetables and inclination to try a variety of fruits and vegetables (McKay et al., 2015). Ontario's Healthy Eating Champions Award recognizes and rewards schools for outstanding commitment in promoting nutrition, nutritional education, and availability of healthy foods (Bouck et al., 2011). The obesity epidemic is in Canada, as is the attempts at intervention.

In the United Kingdom, programs such as Scotland's Hungry for Success, England's Turning the Tables, and Wales' Appetite for Life support the objective of health promotion programs for the reduction of obesity and the improvement of diet and nutrition in schools (Stubbs, Pallister, Avery, Allan & Lavin, 2012). The United Kingdom continues with the prevention and treatment of childhood obesity as a public health priority. The measured amount of obesity in English children has remained steady at 17% since 2007 (Robertson, Thorogood, Inglis, Granger, & Stewert-Brown, 2011).

Ireland's Department of Health reported an epidemic of obese children citing that 1 in 5 Irish children are considered obese (Mooney, 2012). Irish teenagers as well as preschoolers were included in this crisis (Mooney, 2012). These children will face diseases related to overweight and obesity unless they learn and follow healthy eating habits.

Elsewhere in Europe, Norway's children consume fewer fruit and vegetables with more added sugar and saturated fats than nationally recommended (Bere, Veierod, Skare, & Klepp, 2015; Stubbs et al., 2012). A school fruit subscription program (parents pay for their children to have fruits at school) offered little effect in reduction of unhealthy eating (Bere et al., 2015). With the free program, researchers reported an increase in the fruit and vegetable consumption. Bere et al., (2015) evaluated the effects of the free program 3 years and 7 years later after it was provided and found that students in the free fruit group significantly increased intake of fruits and vegetables. Years after the end of the free program researchers noted a sustained improve in students. Bere et al., noted that the effects of the free program were partially mediated through higher participation in the paid school fruit program. When give the opportunity, students will choose to consume fruits and vegetables.

The level of parental involvement influenced the success of failure of school intervention programs. Jorgensen et al. (2015). studied if the school environment affects adolescents' fruit and vegetable intake. Researchers examined the food frequency and 24-hour recall questionnaires in the Danish data gleaned from the European 2011 Boost intervention found that family level interventions play a larger role than previous thought

with the level of parent involvement determining the level of success of the school intervention program (Jorgensen, et al. 2015). School programs worked if the parents were involved at home.

Exercise and physical activity are encouraged in Japan. The occurrence of obese school-aged children rose from 6.5% in 1976 to the current level of 10.5% (Mori, Armada & Wilcox, 2012). As a response to the rise in obesity, but keeping levels well below the international levels, Japan promotes nonmotorized physical travel to school, such as walking or cycling, as source for exercise and activity for children. Japan has a highly refined "walking to school practice," including neighborhood safety, footpaths and trails, public open spaces, and recreational facilities (Mori, Armada & Wilcox, 2012). Not only are Japanese student encouraged to be active and healthy, they are provided with the resources.

South Africa is also experiencing a rise in childhood obesity. The current estimation of overweight and obese children in South Africa is at approximately 10% with projections increasing between 17% to upward 23% by the year 2020 (Toriola, Moselakgomo, Shaw, & Goon, 2011). South African children in urban settings from privileged socioeconomic backgrounds were labeled at risk. Public policies designing prevention and intervention strategies for all South African children are currently being studied with healthy lifestyles including parental education at the core of the policies (Toriola, Moselakgomo, Shaw, & Goon, 2011). Parent education may influence nutrition despite socioeconomic levels.

Australian school-age girls growing up in single parent families may be at risk of higher obesity rates, including the factors of unhealthy eating and television watching, than other Australian youth. Byrne, Cook, Skouteris, and Do (2011) found that female children from single parents were overrepresented in the obese category. Environmental or neighborhood safety caused Australian parents to be less encouraging with girls to go outside to exercise (Byrne et al., 2011). Additionally, these parents were more likely to encourage sedentary indoor activities (Byrne et al., 2011). Parent education may influence nutrition despite socioeconomic levels.

The White House Task Force on Childhood Obesity Report to the President contains documents portraying the numbers of overweight or obese children at an epidemic level in the United States. One in every three children, ages 2 to 19, has a BMI at 85% or above (Lohrmann, YoussefAgha, & Jayawardene, 2014). The task force recommends providing healthier foods in schools by not only improving the quality of breakfasts and lunches but also by improving nutrition education and overall school environment (CDC, 2015c). This includes working with all involved adults to develop unique approaches to encouraging students to make healthier choices. The connection between local schools and growers, or farm to school programs, shows the most promise for local actions. Furthermore, nutrition education intervention shows marked improvement in student dietary decisions (Katz et al., 2011).

The United States Department of Agriculture's (USDA, 2014) FFVP attempts to increase fruit and vegetable intake in the nation's poorest schools. These guidelines contain strategies for implementing policies and practices for enrolled students. Fresh

fruits and fresh vegetables are provided free of cost to students in schools determined by the highest levels of free and reduced-price meal acceptance. Each state determines implementation, as state representatives establish statewide child nutrition policies along with wellness and healthy school environment policies. Mississippi requires teachers to provide nutritional competencies to their students under the framework of a school wellness policy (Lohrmann et al., 2014). Nevada has a statewide school wellness policy created from suggestions by community stakeholders along with the Nevada Nutrition Advisory Committee (Nevada Department of Education, Office of Child Nutrition and School Health, 2011). The Southern Nevada Health District provides FFVP teaching points and worksheets for elementary teachers' lessons (Southern Nevada Health District, 2011). The California Department of Public Health promotes Children's Power Play campaign, a multichanneled, locally based social marketing initiative focusing on low income, ethnically diverse 9 to 11 year olds and their families (Keihner et al., 2011). Federal and state task forces provide a variety of policies and initiatives.

Cooperative nutritional education and physical activity partnerships also exist federally, statewide, and locally (USDA, 2013). Members of the Lake Erie College of Osteopathic Medicine, cooperating with the Sarasota Florida School District personnel, created a service learning program requiring pharmacy students to teach lessons on healthy nutrition and physical activity to elementary school students (Falter et al., 2011). Xavier University students in Louisiana also interacted with middle school students providing nutritional guidance (Xavier University, 2013). The faculty at the University of Louisiana at Monroe instituted a similar program for students (University of Louisiana,

Monroe, 2013). At West Virginia University, the Extension Service manages the Energy Express. This program provides nutrition along with reading programs during the summer months when students at risk experience the "summer slide" or fall behind on reading levels (West Virginia University, 2012). Through these cooperative programs, local educational organizations are able to review and appraise their local policies of wellness and addressing new USDA requirements. Participating districts and schools increase implementation of accountability for local school wellness policies, assessment, and public updates (USDA, 2013).

Parents' food attitudes, healthy or unhealthy, influence their children's dietary intake and weight (Sato et al., 2011). Children's weight strongly correlates with the parental pressure to eat. Sato et al., (2014) discussed that mothers who pressured their children to eat had a healthy supply of nutritious food. The level of food security made a difference. Mexican American parent feeding practices were examined in a longitudinal study showing that parental feeding patterns influence children's weight and conversely children's weigh influence parental feeding habits (Tschann et al., 2015). Similar studies completed with African American and with European American populations had the same results. Mothers who were concerned about the ability to provide enough food saw an increase in volume but not in quality of nutritious food (Tschann, et al., 2015). Mothers who did not have a worry about securing food for their children had a higher level of healthy food available when the children did eat (Tschann, et al., 2015). Plentiful fruits available increased the consumption of fruits while a similar relationship with vegetables did not exist (Tschann, et al., 2015).

Scholars have noted a reduced risk of obesity in adult immigrants to the United States, but having a foreign born mother and the relation to or protection from obesity has been studied at Tufts University in Massachusetts (Tovar et al., 2012). Maternal weight and early weight gain in infants was a better predictor of early childhood obesity than the citizenship factor (Tovar et al., 2012). A mother's weight, not her birthplace, is a factor in children's health.

The amount of fruit and vegetable consumption by age, sex, ethnicity, poverty level, body mass index, and food availability was studied using data from the 2012 National Health and Nutrition Examination Survey. Johnson, et al., (2014) found children up to 5 years of age had higher fruit and juice intake than ages 6 to 11 years and ages 12 to 18 years. Vegetable and French fry intake was much higher among ages 12 to 18 years. Boys consumed considerably more fruit juice along with French fries than girls of a similar age. Non-Hispanic African American children ate a higher amount of dark-green vegetables and fewer amounts of deep-yellow vegetables than their Mexican American and non-Hispanic counter parts. The fruit consumption totals differed markedly among race/ethnicities and socioeconomic status (SES). SES did contribute to overweight children based on dietary choices (Johnson et al., 2014). This data was from the 2012 National Health and Nutrition Examination Survey.

Regionally, though community leaders acknowledge the need for varied and multimodal delivery of nutrition education for both students and their families, community resources have been sporadically available, but underused or undercommunicated to education personnel (CCSD, personal communication, November

11, 2012). The American Heart Association (2016) has a website with downloadable lesson plans for elementary students. Lessons plans include information on different food benefits, meal planning, risk factors identified for heart disease and stroke, physical activity logs, and supporting posters. Using knowledge, food, and fitness to keep a body healthy lesson plans are also available. The local chapter participates in Healthy Adults, Healthy Kids (American Heart Association, 2012).

More resources and programs are available from the local universities. Other programs developed by local university include Veggies for Kids targeted at American Indian students attending a school with a significant population of American Indian students (CCSD, personal communication, November 11, 2012). The local school does not have students meeting this race/ethnicity. A neighboring district received a Team Nutrition-Smart Choices program from the university. This program addressed childhood obesity by building basic skills related to selecting food while encouraging the consumption of different types of fruits and vegetables (CCSD, personal communication, November 11, 2012). The parents also received an out-of-school nutrition presentation. Finally, in partnership with the USDA Supplemental Nutrition Assistance Program Education (SNAP-ED), The All 4 Kids: Happy, Active, Fit program is a program helping Nevada's prekindergarten children and families to practice healthy eating habits and daily activity (CCSD, personal communication, November 11, 2012). This program is available in the metropolitan area of the school district but not in the rural areas where the school is located (UNR, 2012). These community resources, or lack of, indicate that the

larger community views unhealthy childhood eating habits to be a significant problem in the local area and region.

The local PBS station has the Vegas Keeping Kids Fit (KKF) project targeting families with children from ages 2-12 from mainly low income African American and Hispanic Latino environments encouraging a lifetime of healthy habits and choices (Vegas Public Broadcasting Service [Vegas PBS], 2012). This project uses a variety of technology ranging from online, podcasts, and television broadcasts. This outreach program is family based and is accompanied by programs featuring local civic leaders and health experts fostering a discussion on childhood obesity, nutrition, and exercise. The ultimate goal of this local program is to help children and their families maintain healthy habits for a healthy lifetime (Vegas PBS, 2012).

Interventions or programs to promote more fruits and vegetable consumption are mixed and wide-ranging. Delgado-Noguera, Tort, Martinez-Zapata, and Bonfill, (2011) called upon school personnel to set the food habits and preferences that follow students into adulthood. Some programs are free. Other programs attempt to create overall healthier school environments. Other programs encourage increased consumption and also offer nutritional classes, media information, food services provisions and involvement of local adults including parents and local teachers (Delgado-Noguera et al., 2011). However, there is a gap in the practice of school personnel not setting good food habits or examples for students.

Definition of Terms

Special terms used in this study or related with the problem are defined and cited in this subsection.

Additives: Any substance added to food affecting the characteristics of that food (Wageningen UR, 2012).

Body mass index (BMI): A calculation to determine if a person's body weight is healthy for his or her body height. Adult BMI, and child and teen BMI differ according to age (CDC, 2015c; USDA, 2012).

Food security: Knowledge of and ability to have a balanced nutritional food supply (Katz et al., 2011).

Malnutrition: Inadequate availability of nutrients (USDA, 2012).

Monosodium glutamate: Salt of glutamic acid (Zhou, Yang, & Dong, 2012).

Nutrition: Adequate and appropriate nutrient intake (USDA, 2012).

Obesity: A BMI of 30 or higher is considered obese for adults. Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health, leading to reduced life expectancy and/or increased health conditions. (CDC, 2015c; Kaneshiro, 2014; USDA, 2012).

Overweight: Overweight is defined by a BMI of 25-29.9 for adults or weighing too much compared to height of body as an indicator for children (CDC, 2015c; Kaneshiro, 2014; USDA, 2012).

Preservatives: Preservatives are separated by types: antimicrobials inhibiting bacterial growth, yeast, or molds; antioxidants that reduce air oxidation of fat and lipids

leading to rancidity; along with the minimization of the natural ripening and natural enzymatic processes continuing to occur after harvest (Wageningen UR, 2012).

Sodium diacetate: A fungicide and bactericide used to control molds and bacteria in stored grains (Wageningen UR, 2012).

Sodium guanylate: Sodium salt of guanylic acids, is a food additive known to trigger asthma and gout. It works in conjunction with MSG. (Wageningen UR, 2012).

Sodium Inosinate: Sodium salt of insoinic acid, should not be given to infants because it is known to trigger asthma and gout. It is used and works in conjunction with MSG (Wageningen UR, 2012).

Significance of the Study

I recorded the local adult participants' knowledge of and involvement in the delivery, implementation, and effectiveness of the local FFVP documented the program locally. The local elementary school participated in this program for 3 years, with continued eligibility for future years. Local administrators compiled year-end reports as to the acquisition and distribution of fresh fruits and vegetables. However, no study had been conducted to review the participation in this program by the teacher population (B. King, personal communication, August 22, 2011; M. Wilson, personal communication, August 22, 2011). It was unknown if the goals of the federal program were met by this local implementation.

Evaluating this program by documenting the participants' nutritional guidance and training filled a gap in practice with the knowledge needed to create a more effective local health education program and a physically healthier local student population. This

may provide educational decision makers with information so that they can make determinations leading to improved nutritional knowledge and educational experience of the student population. Additionally, local teachers were asked to reflect, examine, and discuss the use of this program in their classrooms, the resources and lessons used, along with the curriculum that this program met. As teachers reflected upon their use and attitude towards this program and its success, the program's weaknesses were revealed, which allowed the local knowledge to be refined and nutritional instruction to be tailored to the neighborhood student and teacher population.

Guiding/Research Question

This project study was driven by a single essential guiding question: What were the teachers' perceptions of the program and products served to the students through the FFVP as it was conducted at the local elementary school? By developing a formative study (the federal program is still active, school officials may reapply again at any time,) and summative study (the program evaluated is the original 3 years of participation) on the attitudes of adult stakeholders, and collecting and analyzing data from food orders, this study brought to light involvement with program components as experienced within the local community.

Qualitative Questions

In the qualitative sequence, I collected data through semistructured interviews and survey questions. In keeping with the central guiding question, subquestions answered were the following:

- How did the teachers, if they were aware of, report meeting the goals of the FFVP?
- How did teachers feel about their resources and knowledge of the FFVP?
- What were teachers' opinions about the FFVP?
- What behaviors did the teachers observe in their students with the FFVP?

Quantitative Questions

In the quantitative sequence, I collected data through examination of archival FFVP documents along with Likert scale survey items. A descriptive research question quantified the variable within the program (Creswell, 2012). The variable in this study was the fruits and vegetables ordered through the program. In keeping with the central guiding question, the subquestions answered were the following:

- How many types of fruits and vegetables were ordered through the FFVP?
- What were the types of fruits and vegetables ordered through the FFVP?

Mixed Methods Questions

The mixed-method research questions for the program evaluation was the following:

- What results emerged from comparing the qualitative data with the data from the quantitative sequence?
- How did these data show what training and knowledge the teachers had available from the program?

I evaluated only the local program. Qualitative questions were used in interviews and the survey. Quantitative data were gathered from archival order documents and

Likert scale survey questions. The mixed-methods question focused on both qualitative and quantitative data by recording the teachers' perceptions of the delivery, implementation, and effectiveness of the local FFVP at the local elementary school.

Review of the Literature

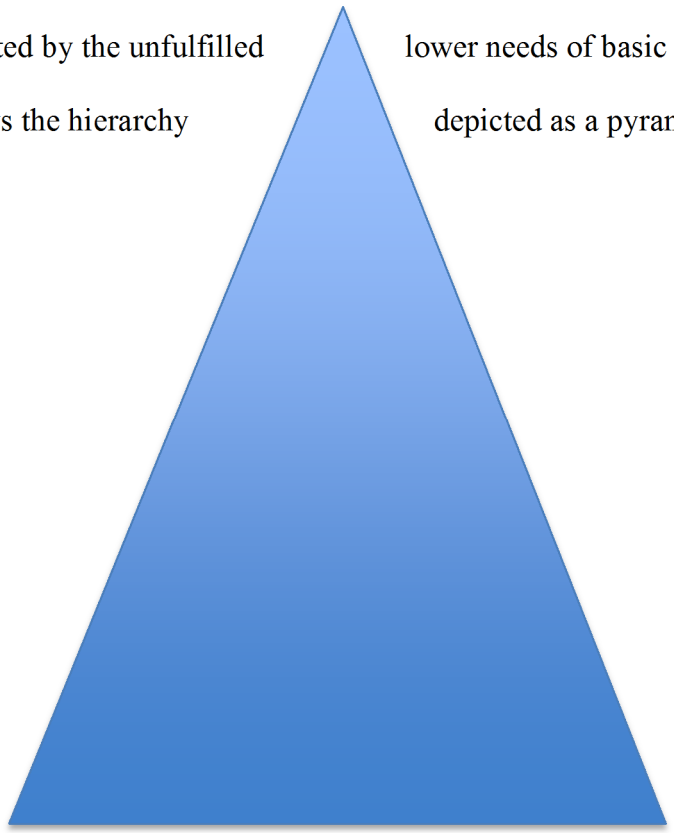
This literature review section includes the theoretical framework of two theories, social ecological model and the social cognitive theory along with the history and direction of child nutrition programs. The social ecological model was used in this project study to show how multilevel modeling used with parents, peers, schools, and communities influence and interact together to influence preadolescent decision making (Anderies & Janssen, 2013; Kearney, Fletcher, & Dobrenov-Major, 2011; McCloud, 2014; Sadri & Bowlen, 2011) applies to student learning. Additionally, I present the history and characteristics of students from low socioeconomic homes and low academic achievement along with the challenges of teaching students in a Title 1 school.

The search terms for both the evidence of the problem, and the literature review, along with related research included the following: *academic achievement of children in poverty; cultural influences on childhood nutrition; diet; cognition and behavior; eating behavior of school children; excitotoxins; food security; fruits and vegetable intake in children; health guidelines in schools; healthy eating policies; healthy school lunches; high BMI in children; improving student achievement; life skills; Maslow's hierarchy; nutritional education; overweight kids; parent nutritional influence; parenting practices; professional development in education; recess; social class and diet quality; school wellness policies; snack habits in children; social ecological model; state wellness*

policies; student behavior; student nutrition; teaching life skills; teaching nutritional choices; and quality of life. Multiple databases were used in the search for current peer-reviewed articles including ERIC, Educational Research Complete, Education: SAGE full-test database, Proquest Central, Science Direct, and Thoreau. During my search I also used SmartText Searching for similar articles and topics. Multiple subject areas were searched. Education was the priority subject area search; however, behavioral studies and psychology, health science, nursing, human services and social services were used also.

Maslow's Hierarchy of Needs

Maslow (as cited in McLeod, 2016) described individuals as an integration of needs dominated by the unfulfilled lower needs of basic survival until satisfied. Figure 1 shows the hierarchy depicted as a pyramid of motivational needs.



Self Actualization
Creativity and Fulfillment

Self-Esteem
Achievement and Recognition

Belonging
Community

Safety
Stability

Physiological
Basic Needs

Figure 1. Maslow's hierarchy of needs

Social Cognitive Theory

According to the social cognitive theory, an individual and the environment always interact with the individual looking for meaning in the dynamic interplay between the individual and the social and physical environment (Keihner et al., 2011). For example, students eating healthy foods before, during, and after school display personal choices within the student's control based on biological and personal history coupled with the student's age, level of education, and available food. After individual influence, primary groups of interpersonal levels such as family, friends, and social networks (set forth by social identity and role) support interaction (Young, Plotnikoff, Collins, Callister, & Morgan, 2014). Social cognitive theorists also address self-efficacy

and proxy efficacy. Self-efficacy is the provision of what the individual student wants while proxy efficacy demonstrates a student's ability to influence others to provided what is needed (Young et al., 2014). Social cognitive theorists also focus on the indeterminate influence of family and the direct effect of peers as students grow and mature (Bean, Miller, Mazzeo, & Fries, 2012).

Social Ecological Model

Understanding students' perceptions and resulting behaviors involves a myriad of factors and interactions within physical and social contexts. There is a varied understanding of the many influences in a student's environment that may affect his or her behavior (Anderies & Janssen, 2013; Lynch & Batal, 2011). The application of a social ecological model clarifies how individual choices appear to be autonomous, that have many levels of influence on the individual including internal and external pressure (CDC, 2013; McCloud, 2014; Sadri & Bowlen, 2011). For example, intrapersonal components involving personal communication skills with community support involving family and peers. The community component, the environment and the structure, includes the community's ability to influence that individual. The community and school conditions directly impact students' behavior reflecting the poverty effect on family processes. Nonparental adults within an impoverished community or school directly influence the behaviors and choices of students. In addition to parental and nonparental adult influence, research shows that as children get older their peer group becomes more influential while familial direction or control lessens (Anderies & Janssen, 2013; Lynch & Batal, 2011). Figure 2 illustrates the layers of the social ecological model.

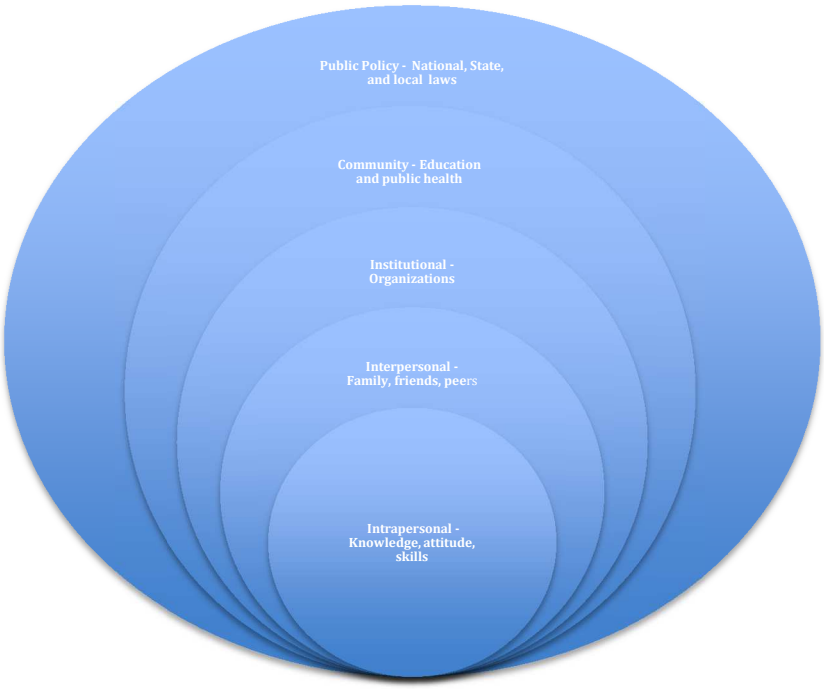


Figure 2. The social ecological model

History of School Lunches

The history and lessons learned with early attempts to feed and educate United States public school students faltered despite the knowledge available from successful and unsuccessful European attempts to supply nutritious meals to school children on a continuing basis (USDA, 2011). In 1854, the Children's Aid Society of New York attempted to feed the local vocational school children while their parents struggled to earn a meager living (USDA, 2011). Unable to influence any partnerships, this attempt did not last long. In 1894, Philadelphia volunteers served penny school lunches. Ultimately, this program became the responsibility of the school district and not a private concern. In 1904, Boston served high school students lunch from one central kitchen, delivering lunches daily (USDA, 2011). Bostonians then experimented with a lunch

program for elementary students. Students prepared nutritious lunches in home economic classes or ate sandwiches (USDA, 2011). All students ate at their desk because there were no school cafeterias at that time. In 1921 Los Angeles joined Chicago, St Louis, Cincinnati, Cleveland, and Milwaukee in establishing feeding programs (USDA, 2011). Rural schools attempting to establish warm nutritious lunches experienced trials and successes with organizing a preparation and consumption area. Children journeyed long distances, and lunches were cold sandwiches with questionable nutritive value (USDA, 2014).

In the 1930s, the Depression years, concern deepened over the nourishment of school children. Many states, cities and school districts developed legislation, including allocating funds, to facilitate schools to serve a midsession lunch to all students (USDA, 2011). By 1937, 15 of the 48 states adopted legislation to feed school children (USDA, 2011). Most meals were for the cost of the food. Poor and needy children received many lunches without cost (USDA, 2014).

State and local legislation empowering local school districts to distribute nutritious meals for their students through various means available in the early 1940s. Local governments and school district boards could not afford the increased load (USDA, 2011). Donations from charitable organizations provided supplemental contributions, as did individuals. This was not enough. Inevitably, state governments sought aid from federal sources (USDA, 2014). In 1943, Congress enacted Public Law 129, authorizing $60 million for maintaining the school lunch and school milk programs that year. In 1946, Congress again recognized the need and formally authorized The National School

Lunch Act. Section 2 of the Act stated that the policy of Congress, as a measure of national security, must protect the health and welfare of the nation's children (USDA, 2014).

In 1966, Congress passed the Child Nutrition Act. The Child Nutrition Act recognized the relationship of food, good nutrition and the capacity of children to develop and learn, based on years of recorded positive experiences under the National School Lunch Program. Additionally, this act directed members of Congress to extend, expand, and strengthen the measure to safeguard the health and welfare of the nation's children. This act also formalized the Special Milk Program, a pilot breakfast program, and assistance for state implementation (USDA, 2014).

President Richard Nixon created the Food and Nutrition Service (FNS) as part of the Department of Agriculture in 1969. Based upon the findings of National Health and Nutrition Surveys (NHANES, 1963-1965, NHANES 1966-1970), researchers began to understand the links between childhood nutrition and adult disease (CDC, 2011b). Over the next 30 years, researchers and politicians volleyed childhood nutrition and learning between funding and research. Researchers underlined the importance of eating meals of different nutritional makeup and how the consumption of snacks influenced the cognitive function in students (Tarasuket al., 2015). Advocating and practicing proper nutrition in schools resulted in a decline in medical, counseling, and disciplinary concerns and an upward trend in standardized test scores (Ryu, & Bartfield, 2012).

In 2002, the FFVP, piloted multiple ways for increasing consumption of fruit and vegetables by students during school time in four states (Indiana, Ohio, Michigan, Iowa)

and Indian Tribal Organization (New Mexico). The FFVP was a catalyst for change in the efforts to curb childhood obesity. The FFVP helped all children acquire healthful eating habits, and the program successfully introduced public school students to a mixture of produce that they otherwise might not have had access to (USDA, 2010). In 2004, the success of the pilot program led to the expansion of the program and the installation of a permanent program under the National School Lunch Act. The Consolidated Appropriations Act of 2008 increased the program nationally. The Food, Conservation, and Energy Act of 2008 (Farm Bill) significantly increased funding to $150 million and adjusted annually by changes in the Consumer Price Index (CPI; USDA, 2014). Today, the FFVP is nationwide and in four U. S. territories

Implications

With the history and understanding of child nutrition programs, the social ecological model advances the understanding of factors associated with behavioral decisions and behavioral change (Sadri & Bowlen, 2012). Wilson (2012) discussed the relationship between independent individuals and the dependency on those individuals' environment. Social conditions, norms, values, and policies of that environment determine a desired outcome or desired change (Anderies & Janssen, 2013; Kearney, Fletcher & Dobrenov-Major, 2011). Individuals demonstrate characteristics that have an impact on knowledge, attitudes, ideology, personality, and skills. In the hierarchy of needs Maslow claims that humans require priority needs met first, as in food, before other needs, such as education (as cited in McCloud, 2014). Sadri and Bowlen, (2011) further explain impoverished parents have differing values as opposed to middle and upper class

parents. Providing sufficient educational support ranks far below supplying a day-to-day existence for impoverished parents. Behavior and emotional problems appear more frequently in impoverished (McCloud, 2014; Sadri & Bowlen, 2011) and reflects on poverty children's stamina to problem solve and endure frustrating and difficult situations (Lynch & Batal, 2011). Furthermore, long-term observational research, completed during the 1980s, allowed better targeting of advertising by segmenting the consumers into groups that share characteristics such as beliefs, values, aspirations, or self-image (Begoray, Banister, Higgins, & Wilmot, 2015).

At the lowest income levels, this group buys junk food and alcohol where once they bought cigarettes. Lifestyle marketing uses visual communications coupled with Maslow's concept of belonging to promote the purchase of items in the belief that families are improving their lives and achieving happiness (Begoray et al., 2015). Lower socioeconomic groups, less wise to this focus, are used to maintain dependency on lower quality brands and unneeded items from questionable choices (Begoray et al., 2015).

Teaching students from low socioeconomic homes is also influenced by Maslow's theory. The academic performance of children living in poverty is 18 months behind middle/upper class students by age 4, and this gap continues into intermediate elementary grades and beyond (Henshaw 2014). Achievement levels are similar in impoverished children and children with affluent backgrounds when taught with economic standards in mind (Payne, 2011). Understanding and addressing the culture of poverty is critical to improving impoverished children's performance academically. Improvement would include addressing a lack of prior knowledge know as scaffolding, along with parental

support. The home life of the students in a Title 1 school significantly contributes to low academic performance (National Center for Educational Statistics, 2015). Parents without a high school diploma, non-English speaking parents, and single parent households are all risk factors that contribute to low student test scores. Students from families that had two or more of the risk factors typically performed lower than students with no risk factors (National Center for Educational Statistics, 2015). Title 1 students' struggles relate back to lack of money, practice, and sensitive monetary topics at home. Impoverished students are more likely to struggle with engagement in school (Jensen, 2013). Primary students face difficulty focusing on edible math manipulates, such as carrots sticks, hard candy, cereal, pizza, fruit fractions, or cookie pieces for addition or subtraction simply because they are hungry (USDA, 2015).

Following interpersonal relationships, the social ecological models shows organizational or institutional influences, such as schools, have codes to control populations. Setting physical activity and healthy food choices as important as academic activity, or rewarding physical prowess as well as mental ability within the school is a sphere of influence. Next, community influence includes social networks, norms, and standards for groups, partnerships, and organizations (Anderies & Janssen, 2013). Models of community partnerships show that working as a team provides a framework for understanding the function of social systems within communities. Strategies reflect the climate and attitudes of community or are marketing effects aimed towards development of a specific climate (CDC, 2011c). District and state policies supporting the local programs contribute to the success of the individual.

The social structure level, the broadest level of impact, is the public policy of national, state, and local laws. The USDA and the FFVP epitomizes the regulation and support for organizational or individual behaviors (USDA, 2011). This leverage encompasses protection of or identification of specific populations, such as public school children with a coordinated and sustained agenda (Anderies & Janssen, 2013). No one level is more vital or consequential than another. On the contrary, each level provides a foundation for the next level to influence and direct an individual, a group, a community, and a nation.

Summary

Raising and educating healthy children to become healthy adults is in crisis worldwide. The challenges that local school children experience include food insecurities, community media marketing influence, and lack of dietary and nutritional knowledge. The FFVP goals endeavor to impact childhood obesity by helping children learn more healthful eating habits and creating healthier school populations providing healthier food choices including expanded types of fruits and vegetables and increased consumption of fruits and vegetables. The FFVP provided resources change children's current diets, influence not only their present health and their future health (USDA, 2011). As explained in Section 2, based on the formative findings of this study, I recommended teachers' suggestions for local refinement or improvement of nutritional education (Spaulding, 2008). Examination of the documents listing types and frequency of fruits and vegetables ordered and received revealed the variety students sampled. Interviews and an anonymous survey with the staff disclosed the effort to create healthier

school children and affect the students' knowledge of a healthier diet. These efforts record the perceptions of the teachers based on the goals of the Fresh Fruits and Vegetables Program.

Section 1 included a summary of the research literature related to student nutritional education as it impacted academic performance and behaviors internationally, nationally, and locally. The theoretical/conceptual framework explained the history of school lunch programs and why school nutritional programs are effective. Furthermore, the purpose and significance of this study addressed the goals of the FFVP.

Section 2 includes specifics about this study's research approach and design. This design included setting and sample; instrumentation along with materials; data collection with analysis; scope, as well as limitations and findings. A literature review and the decisions steps for choosing and developing this study are also included in this section.

Section 2: The Methodology

Introduction

The purpose of this study was to record the teachers' perceptions of the FFVP as it was conducted at the local elementary school through a transactional program evaluation. The intended outcome of this study was to develop a better understanding of the program (O'Neill, 2014). A better understanding of the FFVP involved examining participation, data collection, analysis, and interpretation. Ultimately, in the transactional program evaluation I looked at the program from different vantage points (O'Neill, 2014; Volkov, 2011). I developed a specific and well-developed plan for collecting and analyzing both quantitative and qualitative data using the strengths of both approaches (Cameron, 2011). The evaluation of programs is achieved through a mixed-methods design.

In this program evaluation, I combined the methodology of both qualitative and quantitative data collection, in a convergent parallel design to strengthen each process. Based on the recommendation of Creswell and Plano Clark (2011), this program evaluation provided an in-depth look at content, processes, and interactions, with measurements of attitudes and outcomes. Mixed-method studies are now viewed as the third methodological strategy or paradigm in educational research (Mertens, 2015). Obtaining different but complimentary data on the same topic, illustrating quantitative results with qualitative findings, and synthesizing interdependent results underscore the purpose of the convergent design (Creswell & Plano Clark, 2011). Qualitative researchers emphasize an open-ended approach to research to create new insights. The innovative

application of quantitative research techniques may also provide new understandings of this program (Mertens, 2015). This mixed method format includes a blending of quantitative and qualitative methods. The blending of information from differing data sources provides a triangulation of that data (Lund, 2012). A presentation of both summary numbers or an overview of data, and an in-depth portrait of adult stakeholders is convincing and powerful (Creswell, 2012; Creswell & Plano Clark, 2011). Triangulation of data with member checking corroborates findings. A more comprehensive account of the program offers completeness of processes chronicled or embedded within the study (Mertens, 2015). The strength of one method will offset the limitations of the other method, combining for a complete understanding of the research problem. Qualitative and quantitative methods are predetermined and planned from the outset of this study adding credibility and context to validate the findings of this program evaluation (Creswell & Plano Clark, 2011).

The purpose of this mixed-methods convergent parallel design study was to understand the experiences, practices, opinions, and beliefs of the rural teachers involved in the FFVP. With the approval from the Research Review Committee from my school district (Appendix I) and the Letter of Acknowledgement of a Research Project from my current principal (Appendix J), I began my study. I looked only at the local level implementation of the FFVP. Furthermore, I attempted to determine the effectiveness of the localized FFVP. This included the influence of lessons and practices on the individual teachers, the impact on reaction and the choices of students that teachers observed after

the lesson or food experience. Finally, I examined the teachers' perceptions of participating in this program

While examining a strategy for data collection, I noted that the population of the teachers at the elementary school reflected the norm for the state of Nevada, as did the students. Stratified purposeful sampling and snowball or chain sampling was used to select the interview participants for participation in the semistructured interview protocols. Those same participants used the anonymous survey questionnaire after the completed interview. The multiple forms of qualitative data collected and analyzed include in-depth semistructured interviews of teachers and the open-ended response questions on an online anonymous survey. The semistructured interviews were conducted face-to-face in classrooms before or after teachers' contracted instructional time. Teachers completed the survey questionnaire whenever his or her time allowed.

The data sources in the concurrent quantitative sequence included reviewing archival documents of the FFVP as it was conducted during the 3 years of participation. Additionally, the Likert scale response questions on the online survey questionnaire were a data source for this sequence. This concurrent data source was nested within the predominate design of the qualitative method (Creswell, 2013). This added to a full and rich account or evaluation of the program and its effectiveness through the teachers' experiences.

I considered conducting both quantitative and qualitative research. Quantitative researchers identify a concern formed by a trend or an observation based on an overall tendency from individuals and how that tendency varies among a population (Creswell,

2012). Quantitative researchers seek to understand relationships between variables or to determine the performance of one group compared to another group (Creswell & Plano Clark, 2011). Researcher neutrality and objective measures are valued, along with basic research methods (Cameron, 2013). Qualitative researchers emphasize a more applied research method deemed socially and culturally sensitive (Tashakkori & Teddlie, 2010). Qualitative research entails studying the activities and concerns of participants in natural settings, making sense or interpreting the issues to understand the significance to the participants (Mertens, 2015). Furthermore, qualitative researchers seek to map a complex situation while conveying diverse participant perspectives (Creswell & Plano Clark, 2011).

Combining qualitative and quantitative, or employing a mixed-method research design, provided a full understanding within a research problem (Spaulding, 2014). I assumed that as practitioners, the teachers had valuable knowledge and experience for the basis of decision making within their school (Spaulding, 2014). This design enabled me to establish a specific and well-developed plan for collecting and analyzing both quantitative and qualitative data using the strengths of both approaches (Lund, 2012). The evaluation of programs is achieved commonly through a mixed methods design.

Research Design and Approach

This study was driven by an essential guiding question: What were the teachers' perceptions of the program and products served to the students through the FFVP as it was conducted at the local elementary school? By developing a formative and summative

study, I examined the perspectives of the teachers, and collected and analyzed data from archival food orders to determine how the program components were perceived locally.

The benefit or rationale for a mixed-methods study included triangulation, completeness, counterbalancing weaknesses and imparting stronger inferences, answering different research questions, interpreting findings, illustration of data, tempering or strengthening hypotheses and instrument development and testing (Mertens, 2015). Triangulation promoted validity in corroborative quantitative and qualitative data. A more comprehensive and complete picture underscored completeness of my research. Mixed-methods allowed for limitations and strengths compensating for weaknesses while providing stronger inferences (Creswell, 2013; Mertens, 2015). The research questions that could not be answered completely by either method alone allowed me to use a greater repertoire of tools (Creswell & Plano Clark 2011). Unanticipated or unusual findings from one approach may be explained using an additional research approach. Also, using qualitative methods to illuminate quantitative findings helped fill in gaps of explanation of my findings (Mertens, 2015). Along with hypotheses and instrument development and testing, these explanations identified and supported the design of using a mixed-methods approach for this program evaluation (Cameron, 2011).

Setting and Sample

Population

The student population of the local school was about 500 students. Caucasian students comprised nearly 52% of the school's population, Hispanic students comprised almost 43% of the school's population and 5% of the student population was of mixed

races and cultures. Approximately 78% of the student population received free or reduced lunch and breakfast. With 32 instructional staff members including preK-5 teachers, special education teachers, specialists (library, music, art, and P.E.), and instructional aides, the local school's class size ratios were slightly larger than both district and state norms at 32:1 (NDE, 2011). All instructional staff were Caucasian with 13% of the staff being male and 87% of the staff being female. All participating classroom teachers were highly qualified in elementary education. The teachers had a 95.5 % attendance rate (NDE, 2011). Of the 20 regular classroom teachers, 16 or 80% held a master's degree. The township that the elementary school serves is located approximately 95 miles from largest city in the state, and about 10 miles from another small city. The township had no commercial businesses. The neighboring city had one grocery store, five convenience stores in gas stations, one nation chain mega-department store, and several small national brand name specialty stores. Combined, both city and township had an integrated school population for two elementary schools that fed into one middle school and one high school (City of Mesquite, 2012).

Sampling

Qualitative studies within a mixed-method program evaluation are varied. However, agreement on the purpose of sampling in qualitative research remains not to generalize beyond the sample population (Onwuegbuzi, Leech, & Collins, 2012). Furthermore, if explication and theory remain strictly localized, sample size is not absolutely critical (Onwuegbuzi et al., 2012). Stratified purposeful sampling and snowball or chain sampling was used to select the interview participants providing the

population for the semistructured interview protocols. Using a typical site sampling strategy to select representative teachers, I noted that the local participants were not atypical, extreme, or unusual within the school, district, or state (Patton, 2015). Expedience and scheduling almost always figured into sample selection (Emerson, 2015; Mertens, 2015). Both stratified purposeful sampling and snowball or chain sampling were used to select the interview population, 50% of the teacher population as indicated for generalization back to the total local teacher population (Creswell, 2012). Overall this generalization allowed for the accurate reflection back to immediate local classrooms (Emerson, 2015; Spaulding, 2014) at this school.

Of the 20 teachers available who participated in the FFVP, eleven teachers were selected, 5 teachers were from the intermediate grades, 6 teachers were from primary grades. Of the eleven teachers interviewed 5 of the teachers changed grade levels during the three years of the program. Of those 5 teachers, 3 changed from primary to intermediate or intermediate to primary grades. I purposefully sampled teachers who could provide layered information, teachers who experienced different situations, and who could give voice to the highs and lows of participating in this program. Teachers who participated in the FFVP during the entire program were primary candidates for selection. A list of those teachers was available from the school site office manager (B. King, personal communication, August 26, 2012). The snowballing or chaining sample identified other key teachers having a great deal of information or opinion regarding the FFVP (Emerson, 2015; Heckathorn, 2011).

As the individual teachers were selected for the interviews, the specific characteristics of the representative sample became apparent. Furthermore, confirming or disconfirming sampling was reviewed after the initial interviews (Creswell, 2012). Confirming or disconfirming sampling lent additional reinforcement with richness and depth (Creswell & Plano Clark, 2011; Emerson, 2015; Heckathorn, 2011).

Qualitative Sequence Methods

In the initial design of this mixed-method study the qualitative strand encompassed semistructured interviews with teachers along with open ended anonymous survey questions within the survey containing both qualitative and quantitative Likert scale questions. This strand set the boundaries and established a protocol for recording data (Creswell, 2013). The semistructured interviews were conducted before or after contracted instructional time based on interviewee schedules. The interviews were designed with 30-minute sessions at a minimum. The interviews lasted from fifteen minutes to as long as thirty minutes. Off topic segues by participants were kept to a minimum by referring back to the preapproved protocol. The survey was completed within the participants' own chosen time schedule. This time arrangement allowed me the flexibility to respond new ideas or topics generated by the staff member (Mertens, 2015). With the verbal and written (via email) permission of the lead administrator, the sample population staff was asked to participate in the semistructured interviews. Teachers who participated in the FFVP during the entire program were primary candidates for selection. Questions or statements emerged in the course of the individual interviews and were added to the interview as I became the learner (Creswell, 2012; Glesne, 2011). The

interview questions reflected the basis of my research questions. Observations both verbal and nonverbal were documented in my two-column notes. I attempted to create nonthreatening environments that allow the participants to operate and respond with minimal anxiety (Merriam & Tisdell, 2016).

Interviews

Interviews required my participants to interact in a conversation focusing on questions presented by me. Demirdirek (2011) found researcher-participant relationships, by their unique structure, are situated bonds continuously shifting. Furthermore, researchers are expected to clearly explain participants' actions and statements. The focus of the interview was to elicit specific information and to allow me to enter the perspective of the participant (Mertens, 2015). In a conventional study, questions are asked and participants answer with motives, values, concerns, and needs while the questioning researcher tries to make sense out of the answers created by their questions (Glesne, 2011). An interview protocol is needed that contains questions during the interview and space to record gathered information (Creswell & Plano Clark, 2011). My questions were fully established with more questions emerging during the course of the interview. These questions were added to pre-established ones creating a semi-structured interview (Merriam & Tisdell, 2016). I worked to eliminate any misunderstandings or mistakes in developing insight into the research participants and their human dimension within this instrument (Demirdirek, 2011).

Before the semi-structured interviews, the interview schedule or questions were presented to the participants. The participants, selected by purposeful sampling,

comprised the teaching staff involved critically. I looked for teachers who could provide layered information, experienced different situations, and who could give voice to the highs and lows of participating in this program. Teachers who participated in the FFVP during the entire program were primary candidates for selection. Questions or statements emerged in the course of the interviews and were added to the individual interview (Creswell, 2012; Glesne, 2011). The interview questions reflected the basis of my research questions. How did the teaching staff at this school make a difference in the children's diets to impact the students' current and future health? What was the teaching staff's experience with this program? What were the teaching staff's perceptions about student performance as it related to this program? These questions formed the basis for my open ended semistructured interviews of a purposefully selected sampling of the teaching staff. Additional staff was interviewed as the chaining sample. My interviews happened at the elementary school, before or after the contracted school day. The interview schedule is available in Appendix B, and interview questions are available in Appendix C. The survey questions are available in Appendix G. The survey questions were from SurveyMonkey's question bank that contained questions designed and endorsed by survey methodologists. Categories used to collect questions were education - teacher satisfaction, healthcare, and market research. Adjusted questions, questions that may be personalized by the SurveyMonkey site, such as adding the program name, were adapted without compromising effectiveness or certification. All other survey questions stayed as used on the site. These methods allowed my participants to voice experiences

unconstrained and with confidentiality about this program providing both historical and personal views and opinions.

Data Triangulation

Triangulation conveyed the investigation of research questions using more than one approach to support validity. In qualitative research validity referred to research that was plausible. That research must also be credible, trustworthy, and defensible (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). Data triangulation required the collection of data from several sources so that portions of data during varied times and different social situations converge (Carter, et al., 2014). Method triangulation required using multiple methods to gather that data (Mertens, 2015). Triangulation serves to insure the validity of a researcher's study by cross checking findings (Spaulding, 2014).

The different data sources were compared to one another. Data from the semistructured interviews and completed survey and the archival documents completed the data sources. I noted themes or patterns. I composed a summary with explanation recognizing that my interpretation depended on the verbal and nonverbal observation of the participant's response (Mertens, 2015). However, triangulation was the principal strategy to account for validity, dependability, and for reliability generating understanding within the qualitative strand of this study (Emerson, 2015; Patton, 2015).

Role of the Researcher

In the qualitative study sequence, I was the channel or medium for the research (Merriam & Tisdell, 2016; Patton, 2015). I identified my relationship to the participants including my gender, race, ethnicity, and socioeconomic status. I was a 60+-year-old

Caucasian female, wife, mother, and grandmother. My family members emigrated from the Northern European and United Kingdom countries in the late 1800's. My socioeconomic status was that of a 20-year teaching veteran in my district with a master's degree plus an additional 45 educational credits on the salary scale. In an effort to keep appropriate subjective perspectives and reduce researcher bias, I met with several volunteer peer debriefers on a regular schedule (Spaulding, 2014). This revealed the lens and the filter with which I viewed and recorded the participants and the information each one has to offer (Research Salad, 2011). I kept a research journal illuminating personal reactions and reflecting on insights into self (Simon, 2011). Various forms of bracketing, such as the reflective journal, memos, or personal interviews with outside sources, mitigated any of my preconceptions about the interviews (Tufford & Newman, 2012). Participant feedback and member checking diminished my bias as I interpreted my research (Mertens, 2015).

With the quantitative sequence, the collection of data occurred independent of my expectations and biases (Creswell, 2013). Ideally, my study was repeatable by other researchers in the same conditions yielding similar results (Simon, 2011). I considered objectivity vital.

I was one of the teachers at this school who participated in this program, therefore, I am deemed as a participant observer with an emphasis on the participant as the observer, even a full participant (Glesne, 2011). Additionally, I have served as a classroom teacher, grade-level chairperson, Professional Learning Community (PLC) facilitator and instructional coach for the teachers at this school. My interviews

happened at the elementary school, before or after the contracted school day, whichever was more convenient for each participant. The interview schedule is available in Appendix B, and interview questions are available in Appendix C. The survey questions are available in Appendix G. These interviews allowed my participants to voice experiences unconstrained and with confidentiality about this program providing both historical and personal views and opinions.

Quantitative Sequence Methods

The rationale for combining quantitative with qualitative methods in a study focused on content analysis (Mertens, 2015). Program evaluation through mixed-methods research encompasses both collecting and analyzing quantitative and qualitative data. While qualitative researchers use methods of data collection, quantitative researchers speak of the instrument used for data collection (Spaulding, 2014). In this concurrent strategy, quantitative data was analyzed for single item scores. Quantitative information was found in documents such as public records. The analysis consisted of statistically analyzing scores collected on instruments, checklists, or public documents to answer research questions or to test hypotheses (T. Dillard, personal communication, October 11, 2013). For the quantitative sequence of this study, I examined archival school district documents recording the amounts ordered of the fresh fruit and vegetables. I copied the information by hand (Appendix G). This independent quantitative strand was conducted concurrently with the qualitative strand. The two strands were mixed when drawing conclusions and interpretations at the end of this evaluation (Creswell & Plano Clark, 2011).

Descriptive statistics or summarization of data in a relevant manner helped to present raw data (Lund, 2013). The use of descriptive statistics showed data from the specific source, describing the characteristics of only that source (Mertens, 2015). Measures of central tendency illustrated medial positioning for data groups along with the measure of spread or dispersion of that data (Urdan, 2011). The spread encapsulated highs and lows by range, quartile, absolute deviation, variance, or standard deviation. The ratio scale represented quantity and has equality of units. A ratio scale also had an absolute zero in that no numbers exist below zero. Routinely, physical measures, or discrete data, represented ratio data (Creswell, 2013; Urdan, 2011). As the data was summarized, a descriptive picture was created by a combination of statistical commentary based on the results displayed in tabulation such as a table or in graphical description using graphs and charts (Lund, 2013). Addressing the reliability and the validity of the descriptive picture accounted for both the consistency of my instrument and the validity of my measurements. This view formed a basis where the concept and the measurement were the same, reliable and consistent (Urdan, 2011). The completion of the statistical analysis encompassed the entering of data in the Data Editor for SPSS. From the input step transformations, analyses, manipulations, creations and editing of tables to APA standards occurred.

I studied various archival school district documents recording the ordering of the fresh fruit and vegetables, examined, and hand copied (Appendix G). This assisted in determining the variety and manner of fresh fruits and vegetables provided to the students. Considerations included what was ordered, and what was not ordered (Glesne, 2011). I examined documents for the accuracy and benefit in answering the research questions and meeting the program's goals (Spaulding, 2014). My comments, observations, and questions were noted as the archival documents were examined. The expansive open coding was used to identify relevant information. This information was developed to groupings and categories (Creswell, 2013). A table organizing the compiled data was placed within the results, as was the subsequent organization and calculation for analysis of information. Finally, corroboration of data occurred, and elaboration on similar findings transpired. Further development of the sampling was used (Spaulding, 2014). Contradictions and alternate perspectives extended the span and scope of a study by using qualitative and quantitative practices for evaluation (Patton, 2015).

Questionnaire (Web-based Survey)

Analysis by questionnaire has been frequently used a method of deeper understanding since 1920 (Kalayci & Cimen, 2012). Researchers are in agreement such that questionnaires are influential and effective in improving the caliber of the research (Creswell, 2012). However, considerations in regards to reliability and validity of questionnaires still exist among researchers (Kalayci & Cimen, 2012; Patton, 2015). Reliability relates to repeatability, consistent results or repeated findings that over time

shows reliability (Walonick, 2013). Validity shows the instrument measures what was intended to be measured (Darawsheh, 2014).

The questionnaire permitted me to gather additional data from the participants without the stress of time limits along with asking specifically about the thoughts and impressions created by the FFVP that participants may have had trouble expressing during our interview. Participants were asked to complete the survey questions within two week's time after I had emailed the web link for the survey.

Pilot questionnaires are important in mixed method research where the competing methodological stances can lead to ineffectual results (Secomb & Smith, 2011). The viability of the questions were tested by review and revision with a separate group before presentation to selected participants (Spaulding, 2014). This enabled me to reflect and revise adding to understanding during the triangulation with interview data. Appendix H is a copy of the survey questionnaire.

The survey was from questions that focused on teachers' perceptions of school programs, healthcare questions, and market research questions. Question formats included quantitative Likert scale responses and qualitative open written response answers that focused on teacher experience and resulting perceptions. The validity of the questions reflected the degree to which this data collection instrument measured what it was intended to measure and was context-dependent, e.g., a questionnaire that yielded valid results with intended participants (Evaluation Resource Center [ERC], 2011). A pilot study, evaluated by teachers who gave written feedback after completing the survey, helped determine that members of the sample population could understand and complete

the survey (Creswell, 2012). Furthermore, the pilot group was excluded from the final sample asked to complete the survey.

Data Analysis and Validation Procedures

This layered approach was designed to evaluate the local FFVP**.** My evaluation was based on the perspectives of the teachers as it was conducted at the local elementary school**.** The specific findings will be presented in later segments.

Quantitative Sequence

I prepared the archival school district data for analysis by scoring the data assigning numeric values to each entry or order. A codebook with listing of codes used was developed showing entry, orders, and numbers associated with each (Creswell & Plano Clark, 2011). In keeping with the central guiding question, the sub-questions to be answered are: How many types of fruits and vegetables were ordered through the FFVP? What are the types of fruits and vegetables ordered through the FFVP?

Enumeration. The enumeration or the counting of types and numbers of fresh fruits and vegetables ordered used archival order invoices. From the order invoices, a systematic and comprehensive coding system was developed including all possible forms that the data may have taken (GitHub, 2012). Coding included the number of times each individual fruit or vegetable was ordered and then compared with the number of times other fruits and vegetables were ordered. This information revealed through the quantitative sequence the amount and variety of the fresh fruits and vegetables available. My enumeration was relevant and adaptable yet flexible to add detail beyond the initial vision (Sumaya, 2012). With the enumeration and scoring of invoices, I created a rich

and thick description from broad themes narrowing as the data directed. My enumeration organized the invoice data from the archival documents.

The descriptive statistics procedures were used to make sense of this group of numbers. Using ratio numbers addressing discrete quantitative variables, the data was entered into SPSS by placing each group of into the data editor (Urdan, 2011). Exploring and interpreting what information was available preceded my analysis and validation of the data (Rabinowitz, 2013). Scoring of the documents included the types of fruits and vegetables along with the frequency of different types of fruits and vegetables ordered. Looking at mean, median, mode, otherwise know as the averages, required a decision as to the most meaningful organization of the data (Mertens, 2015). Analyzing for the mean of the fruits or vegetables could be used within a frequency table. The frequency graph might display each score and the frequency with which the item or score occurred (Spaulding, 2014). Looking for the mean number of times a fruit or vegetable was used indicated attempts at expanding the types of fruits and vegetables the students experienced. Searching for the mode meant analyzing for the type of fruit or vegetable that was used the most. The median, or halfway, demonstrated the central tendency in this set of data with awareness of outliers and the effect on the range (Spaulding, 2014). Looking for a symmetrical or asymmetrical distribution attended to the possibility of skewed distribution (Lund, 2013). I looked for the most meaningful organization of this data to enhance the evaluation of this program.

I examined the records of the orders placed for the fresh fruits and vegetables over the past three years revealing what types of fruits and vegetables were provided at the

local elementary school. My notes showed how the different types of fruits and vegetables were tracked or observed. Analysis of data occurred as the information and forms become available allowing focus and shaping of this evaluation as it proceeded (Glesne, 2011).

Descriptive statistics showed evidence of the mean, mode, and median of the data, in other words, the general tendencies of the data. Distribution with tendency scores, illustrated range and standard deviation of the data (Creswell, 2012). The computer program Statistical Package for the Social Sciences (SPSS) analyzed the recorded data. Using descriptive statistics in this quantitative strand created a full rich layer to this evaluation. The SurveyMonkey computer software analysis guided the categorization of the Likert scale answers submitted. The analysis showed graphs created, response summaries, data trends, and then individual responses using SPSS to do the calculations (Creswell, 2012; SurveyMonkey, 2013). The survey targeted the specific indicators of the program evaluation from which frequency statistics determined how teachers perceived various FFVP components. The coded survey data generated clusters of teacher responses setting the preparation for data analysis. Frequency statistics disclosed the amount of responses to each question. The data from teacher surveys and teacher interviews were consolidated in order to induce triangulated findings. I built on academic recommendations for mixed-methods, concurrent triangulation designs (Creswell, 2013). Data transformation of my quantitative survey data was coded and compared to my qualitative interview data. This created another rich layer for this study.

Qualitative Sequence

My initial preparation of the qualitative data began by using both the interview question protocol and the coding matrix table to guide the analysis of the collected information (Creswell, 2012). The collection the data with the coding was a repetitive or iterative action. Organization and reduction were achieved through coding (Hale & Astolfi, 2011). Analysis of collected data was initially viewed through content analysis, the systematic classification process of coding and identifying themes or patterns (Merriam, & Tisdell, 2016).

Coding of perception or the records of a participant's understandings further refined the data analysis. The use of process coding, the notation of changes within the interview or survey and the factors that contributed or caused the change, assisted with organization and identification. These codes became inclusive or were used individually. The coding analysis and interpretation was comprehensive, accurate, and enabled understanding of the program evaluation (Hale & Astolfi, 2011). My margin notes on the copies of transcripts of all interviews showed themes and patterns emerging. The creation of a current matrix recorded and summarized connecting threads.

Next, I looked for segments and themes that make sense from the collected data. Member checking or respondent validation insured realistic accuracy and credibility (Merriam & Tisdell, 2016). Based on the triangulation design, the data both quantitatively and qualitatively showed analysis and comparison at the same time (Spaulding, 2014). Threads, patterns, and themes guided this process.

The coding of the open response questions of the survey consisted of using both the question and the coding matrix table to guide the analysis of the collected information (Creswell, 2012). The collecting of the open response data with the coding was again, iterative or a repetitive action. Organization and reduction were achieved through coding (Hale & Astolfi, 2011). Analysis of collected data was initially viewed through content analysis, the systematic classification process of coding and identifying themes or patterns (Merriam & Tisdell, 2016). The coding of perceptions recorded participant's understandings of the FFVP further refined the data analysis. Finally, the use of process coding with the notation of changes within the survey and possibly the factors that contributed or caused the change assisted with organization and identification. These codes were all inclusive. These codes were also used individually. My coding analysis and interpretation was comprehensive, accurate and enable understanding of the evaluation (Hale & Astolfi, 2011).

Viewing the trustworthiness and the validity of data considered if what this program evaluation reports measuring was actually measured and were those measurements consistent (Howell, et al., 1994-2012). In fact, reliability or repeated similar measurement results is categorized in four ways. Equivalency reliability refers to a correlation among variables. Stability reliability, also known as test, retest looks at the consistency of one measurement instrument at different time periods (Creswell, 2012). Interrater reliability reflects that the multiple uses of an instrument by more that one researcher shows consistent results when assigning scores (Howell et al., 1994-2012). Internal consistency relates again to measuring what is reported measured. This may vary

based on ways participants answer questions or complete questionnaires (Urdan, 2013). In this evaluation I insured the internal consistency and reliability by using a piloted survey and initial interview protocol methods along with member checking and data triangulation showing the relationship between sets of data.

The validity of this program evaluation reflected back on researching what I said I was going to study. Other researchers applying these findings to their own study may determine the external validity of this study based on their own methods. However, this evaluation's intent is to remain local, not to be applied elsewhere. The internal validity, the rigor with which this study was conducted determined the success of measuring what I proposed to measure (Howell et al., 1994-2012). The face validity (Spaulding, 2014) addressed the reasonableness of what I designed and access gained to what I wanted to study.

Construct validity insures measuring intended data (Creswell, 2012). Additionally, the construct validity must be in agreement with the theories that this study is based upon. I determined construct validity by reassessing the theory chosen to support this study. Next, I examined the data collected thorough this study. The final step for construct validity was to interpret my findings based on my selected theories (Howell et al., 1994-2012).

Integrating both the qualitative and quantitative data is conducted after the separate sets are analyzed. This process is also called triangulation. Triangulation can be used to describe both the relation between two sets of data, or it can mean to study a process using different methods to reach a clearer impression or view (Wisdom &

Creswell, 2013). The second meaning of triangulation, reaching a clearer view, was used for this portion of my evaluation. After all sets of data had been analyzed individually, several techniques are available to researchers. Initially, the findings are listed on a single page. Researchers look for positive convergence where the data agrees or has complementarity intersections offering compatible details. Dissonant or discrepant data would contradict each other (Wisdom & Creswell, 2013). Dissonance or discrepancy is not a sign that the study is wrong, but may lead to a better understanding within the research questions. Both procedures were used in this study reflecting back on the research question.

Using a realistic view that defined the role of the theory and the program under study, the evolution of this evaluation built a constructive outcome based on the shared learning that occurred in a cooperative and consultative environment providing both a beneficial objective summative overview and a beneficial participative formative awareness (Patton, 2013). Shared perceptions of the program as it was administered locally was the target for this study, to benefit the health of local students for a positive social change and continued positive nutritional choices.

Limitations

The limitations in this study were noted as a restriction of application, potential weaknesses, or problems encountered. This included concern over variables, the impact of or to participants, a change in sample size and factors relating to my data collection, and then my analysis (Creswell, 2012). My study of the FFVP was not be a comprehensive evaluation of the federal program overall. Instead, my evaluation looked

at the perceptions of local teachers participating in this program. My results may or may not be generalized to other rural schools, urban schools, districts, or schools in other states or countries.

My colleagues may have answered questions biased in numerous ways. Due to the small staff size and length of time together, the staff may have answered questions based on what they thought I wanted to hear. Teachers may have been embarrassed to admit a lack of understanding or frustration with lessons. Teachers and staff may have felt imposed upon or feeling harried trying to meet with me and complete the requirements in their day-to-day positions.

My bias as a middle class, educated, employed, Caucasian female, and as a wife, mother and grandmother may have had positive or negative effects on the data collection, observations, and interviews. These limitations have been discussed to ensure the trustworthiness of my data (Glesne 2011).

Assumptions

Through this evaluation, I assumed that all participants gave honest and sincere responses without regard to my position within the school site. The predominant participants at this school were educated, female, middle class, and Caucasian with a few Caucasian male teachers as the non-predominant participants. I assumed that the interview findings would be extrapolated to the school's remaining teacher population. I assumed that the teachers not participating in the interviews and observations would have had similar experiences, expectations, and perceptions.

Additionally, I assumed that the school and the district did not provide a specific structure of daily nutritional educational resources. Teachers use what resources they could find. I also assumed that the school administrators believe teachers have an in-depth knowledge and awareness of the district curriculum. Another assumption was the school administrators believed the participants recognized the need for nutritional education.

I assumed due to high stakes testing in math and language arts nutritional education had a low priority with classroom teachers. With the ongoing research connecting nutrition and learning, classroom teachers and administrators may take a renewed interest and commitment to this portion of the curriculum. This renewed interest and commitment may improve their students' health and academic achievement and students' well being for life.

Protection of Participant's Rights

My first responsibility to my participants, and to my study, was to obtain informed consent from my study participants. My ethical responsibilities also included ensuring individual privacy along with ensuring confidentiality and protecting my participants from harm (Glesne, 2011; Spaulding, 2014). During data collection, no personal identification information was gathered or stored. Interview response data gathered was stored securely within a password protected computer and recording device located at my home. The data was not gathered or accessed from school or district computers. The data collection, interviews, and coding occurred during nonacademic time such as before or after school. Only I coded data and interview information. The

teacher interviews were conducted on a random schedule versus grade level or location to ensure confidentiality. The interview schedule was used to confirm completion of interview only (Appendix C). My participants were informed that they could stop and leave the interview at any time and could choose not to answer questions that make them feel uncomfortable. Any teachers that I may have supervised or teachers declining interviews were not included. All data was securely stored until after my study was completed and my degree confirmed.

Before collecting any data or conducting interviews or observations, approval from the Walden IRB was required and obtained. The research ethics planning worksheet from the Institutional Review Board site was downloaded. Each standard was addressed within this proposal. The administrator at this elementary school agreed to grant permission for data access, participant access, and facility use as did the school district (CCSD, 2012).

Proper data storage of participant information ensured minimal ethical concerns (Merriam, 201). Multiple steps were taken to insure confidentiality and privacy. Data was stored in a secured area of my home. All computer files were password protected including recordings done on personal electronic devices. Proper data storage was and is a priority. All survey data was printed and saved in my research log. The survey link was closed to my password protected SurveyMonkey website account. My research log was retained in a locked file in my personal home office. When not at home, my home security system is armed.

Data Analyses Results

The participants shared that they were supportive of FFVP as it was conducted at the local school. There were concerns, observations, and suggestions for improving the local implementation. The data was collected and analyzed in a convergent parallel design, combined the methodology of both qualitative and quantitative data collection approaches from the qualitative sequence and the quantitative sequence.

I asked questions based around the goal of creating a healthier school environment by providing healthier food choices. More than one participant responded that students always looked forward to the fresh fruits and vegetables that were delivered to the room. My questions also focused around the goal of expanding the types of fruits and vegetables the students experienced. All participants responded that the variety the first year was much greater than the second and third year. The quantitative data supported the participants' claims. I focused on the goal of the federal program to increase the consumption of either fruits or vegetables by the local students. Teachers shared that if the students were given servings, fruit or vegetable consumptions were increased. The fourth goal of making a difference in the children's diets to have an impact on their present and future health was met when teachers shared that students would return to school excited to report they had contributed to the choice of fruits and vegetables their individual families purchased at the grocery store. Then, during the coding and development of themes from the qualitative interviews of the participants three strong themes were noted involving (a) student behavior or influence, (b) time, and (c) resources, as shown in Table 1.

Table 1

Thematic categories of teacher responses

Theme	Comments (n=11)	Quote	Outlier
Student Behavior	Excited when food delivered to room (11)	"It gave them an opportunity to try food they never had before."	This was breakfast for more that just a few of my students
	Anticipation of food (7)		
	Student influence and Attitude (6)		
	Attention Span (11)		
Time	Instructional time shortened (11)	"By the third year I did a whole lot better managing with this program."	Down time for kids to relax and reenergize
	Classroom management (6)		
	Interruptions (7)		
Resources	Amounts of food (6)	"To hand it out I had to get organized!"	No more ranch dressing. I didn't think my floor was ever going to be the same again.
	Prepare lesson plans/curriculum (8)		
	Supplies and Waste (7)		

These themes were supported and strengthened by the qualitative open response answers from the survey. Concurrently, I studied various archival school invoice documents recording the ordering of the fresh fruit and vegetables for the participating 3 years. With

descriptive statistics I was mindful of the fruits that were ordered the most, the vegetables that were ordered the most, along fruits and vegetables that were only ordered once. The Likert scale survey data were recorded and tables created. The qualitative data was compared to the quantitative data. The quantitative data supported the participants' statements recorded in the interviews, and the qualitative opinions and perspectives of the participants reinforced the statistics generated by the quantitative data. Combining the methodology of both qualitative and quantitative data collection of this fixed mixed-methods study provided the strengths of each process including an in-depth look at content, processes, with interactions, and measurements of attitudes, and outcomes (Creswell & Plano Clark, 2011).

Qualitative Findings

Participant interviews (*N*=11) occurred over several weeks, meeting at the participant's chosen time and location before or after contracted school time. There were three themes that emerged from the qualitative data analysis, (a) influence on students, (b) time, and (c) resources, as shown in Table 2.

Table 2

Descriptive details from participant interviews

Research Question	Common or Typical Statements With Themes	Least Common Statements With Themes
How do teachers feel about their resources and knowledge of the FFVP?	Worthwhile-Influence on Students Great- Resources In the future-Influence on Students Enlightening-Time Helpful-Time	Breakfast for more than a few students-Influence
How did the teachers, if they were aware of, report meeting the goals of the FFVP?	Need more information-Resources Delivery Communicate expectations-Resources Form a team-Resources /Time What goals? -Resources /Time	No more ranch dressing-Time I don't think there was a down side-Influence
What are teachers' opinions about the FFVP?	Buy locally-Resources Adjust amounts-Influence on Students Monitor Quality-Influence on Students	Positive peer pressure- Influence
What behaviors did the teachers observe in their students with the FFVP?	Excited-Influence on Students Curious-Resources Did not like-Influence/Resources Anticipation-Influence/Resources	Down time for students-Time Who can eat all those Radishes? -Resources

Once the individual participant approved the transcript, a survey link was sent to his or her email address. Of the 11 participant interviews, nine responded to the survey (*N*=9). The questions on the survey (Appendix G) were similar to the interview questions with both Likert scale answers and opened ended responses. To insure the validity of the quantitative data and the accuracy of the qualitative data (Creswell, 2013), the answers on the survey were compared to the answers in the interviews looking for a convergence, difference, or a combination aiding in answering the overarching research questions regarding the teachers' perceptions of the FFVP. This was part of the method triangulation. Additionally, both tools clarified trainings and schedules participant's felt would improve the success of meeting the goals of the FFVP. Table 3 shows the answers to the open response survey questions as answered by the participants.

Table 3

Qualitative Survey Questions with Most Frequent and Least Frequent Response

Qualitative Questions	Most Frequent Response	Least Frequent Response	Theme
1. How easy was it to get the resources you needed to teach and meet the goals of the FFVP at this school?	As expected or somewhat difficult	Easy	Resources
2. How well did the teachers at this school in regards to the FFVP collaborate with each other?	Very little	Always	Time, Resources
3. How high were the expectations, at this school, for teachers meeting the goals of the FFVP?	Very low	Moderate	Resources
4. How much attention did this school give towards your professional growth in regards to the FFVP?	No attention	A great deal	Resources
5. Overall, are you satisfied with your experience at understanding and meeting the goals of the FFVP?	Satisfied or did not know about goals	Extremely satisfied	Time, Resources, Influence

The open-ended survey response answers were notably shorter, as expected, than the interview answers as shown in Table 3 as were the responses in Table 4.

Table 4

Quantitative Survey Questions with Most Frequent and Least Frequent Response

Quantitative Questions Open Response	Most Frequent Response	Least Frequent Response	Theme
6. What are the strengths of the FFVP?	Variety of fresh fruits and vegetables	Student concentration	Influence
7. What are the weaknesses of the FFVP?	Time, quality, waste	Preservatives added	Time, Resources
8. What suggestions do you have for improving the FFVP?	Time and quality	Form a team	Resources
9. What training was necessary in order to help teachers meet the goals of the FFVP?	None	In school	Resources
10. What other comments or suggestions would you like to make about the FFVP at our school?	Bring it back like the first year	Assign responsible person for staff development	Influence, Time, Resources

Overall, 36 different types of fruits and 37 different types of vegetables were ordered within the three years of participation. Not all 36 fruits types and not all 37 vegetables types were ordered each year. The varieties and amounts ordered decreased from year to year. Additionally, the teachers' comments about amounts and variety were noted in the qualitative sequence and supported in the quantitative sequence forming a common thread that the teacher felt the program started out strong but became increasingly weaker with subsequent years.

Participants' comments included:

- The first year was really, really good. The fruits and veggies were fresh and there was a huge variety. It seemed like it went down-hill every year after that."
- The first year was wonderful and very enlightening for the children to get fruits and vegetables they had never seen like broccolini or plums. It was fresh, it was local, the second year not so much."
- Comparing the quality from one year to the next made for some disappointing days the second and third year."
- I would do this again if the fruits and vegetables were fresh and not prepackaged.
- Having a variety of foods to explore and taste for the kids."
- The second and third year were not as good, the fruits and vegetables were almost as good and but not as much variety."

Influence on students. When asked about the positives of the program teachers often mentioned students were excited, interested, curious, or had a great deal of anticipation. By setting the example of healthy eating with healthy foods in the

classroom, students confiding that they asked their parents to get a fruit or vegetable that they saw in the grocery store after they sampled it at school. Teachers often mentioned the opportunity to try knew foods and the influence culturally or attitude of other students about specific foods. Teachers also spoke about attention span before and after food was delivered.

One teacher commented:

"It became very obvious, you put good things in, you get good things out."

Teachers also disclosed adapting non-health related lessons and using food as part of the realia to connect the student to the lesson. One teacher spoke about a Language Arts lesson about Louis Armstrong. In the reading assignment one of his favorite foods was Jambalaya, a Cajun dish with rice, shrimp, chicken, and vegetables. The students had no idea what Jambalaya was so the teacher made a crockpot full of a modified version of Jambalaya the next day and used it as the anticipatory set for review and discussion about the Louis Armstrong lesson. The lesson was, as the teacher put it, "textbook," for student participation, recall, and application. Some students compared it to the Spanish Rice they have in their own homes.

Time. Another area that was mentioned multiple times whether it was a negative or positive was the concern about the time it required to set up, serve the food, and clean up, much less prepare a lesson for the food. The interruption during the instructional time was a reoccurring statement. Suggestions were ranged from hire someone to do a good job with this program, it took more time out of my day than I wanted it too, time away from other instruction and practice, I would have enjoyed it more if I could have spent

more time on it, I became more aware of using food as a motivator but it required more of my time to set it up, delivered at a hard time of day, I had to take timeout to teach the kids how to wash their hands so they could handle their own fruit or vegetable, and finally, it was a down time for the kids, they relaxed and refueled. One of the comments that could have been placed into the coding of time or into perspective was:

"I have a degree in Education, not in Food Service."

Resources. A third theme that immerged through the interviews and through the surveys was a lack of knowledge about lesson plans, lesson ideas, websites, local providers, professional development, and basic supplies to help with food disbursement in the classroom. Repeatedly, when teachers were asked about lesson plans or resources for lesson plans most teachers had never hear of the program goals and the websites available for their use. Teachers commented that if they knew what fruits or vegetables were coming they could plan lessons around the food including geography (where it was from), math (how many), and science (parts of a plant). Additionally, teachers conversed about the need for napkins, plates or bowls to serve the food. Teachers expressed frustrations when whole fruit or vegetables were delivered to the classroom making individual servings difficult or unwashed whole apples, oranges, or pears getting one bite then thrown in the trash. The term "wasteful" emerged in interview after interview. Additional frustration was voiced with same size portions delivered to primary students as delivered to intermediate students. A teacher related, "The portions we received in 1st grade were way off base. My 10-year-old could eat the amount that was delivered but not my 6-year-old. Wasteful."

One teacher, as did other teachers, related about the time a whole watermelon was delivered to the classroom. She transported the melon to her home at the end of the day, cleaned it, cut it into serving size pieces, and brought it back to school the next day for her students. Finally, teachers had many questions. Why weren't we told about the goals? Why didn't we get any training on this? Why wasn't this in our professional development? This is something we could have used!

The word "excited" was used by six teachers to describe the students' behavior as the food was brought into the classroom. The participants described the influence of other students on students trying new food for the first time. Peer pressure, whether positive or negative, influenced students' decisions to try new foods. Students' attention span was also addressed when food was in the room. This teacher's comments mirrored other teachers' observations:

> When the food was delivered it was a disruption, even though they didn't say anything, it was a distraction having it in the classroom. The food was more enticing than practicing math. If the students really wanted the food, they just kept asking for it.

The time element included when food was delivered to the school, the classroom, and the freshness of the food. In terms of resources, participants spoke about classroom management to pass out the food, lesson materials to use with the food, knowledge of the curriculum. Within resources, comments where often about amount of food, and the amount of waste in the second and third year. The

words, “so much waste” occurred over and over. Resource comments also included lack of knowledge about the program, goals, and supports.

Quantitative Sequence

Concurrently, I studied various archival school district documents and recorded the ordering of the fresh fruit and vegetables. I examined and copied the information using the orders form (Appendix E), determining the variety of fresh fruits and vegetables provided to the students for each of the three participating years. As Glesne (2011) suggests, consideration was given to what was missing. I looked at what was ordered, and what was not ordered. Documents were examined for the accuracy, completeness, and usefulness in answering the research questions and meeting the program’s goals (Spaulding, 2014).

Comments, observations, and questions were noted on my working copies as the archival documents were examined. For example, during the 2011-2012 school year Grapples (pronounced with a long a, grape-L’s) were available for order. I researched Grapple and learned that according to the grower, C & O Nurseries in Wenatchee, Washington, Grapples begin as fancy Gala or Fuji apples that are immersed in a natural and synthesized artificial grape flavor agent. The Washington State Department of Agriculture where the Grapples are produced, classifies these as a processed food and must be packaged as a processed food item.

Once all three years were hand copied from the original invoices, the fruits were alphabetized and assigned a number and the vegetables were alphabetized and assigned a number. Next the IBM SPSS Statistics Program Macintosh Version 21 was used to

perform statistical analysis. I created an Excel worksheet and graph for each year of the program. This expansive open coding identified relevant information developing into groupings or categories (Creswell, 2014). Tables organizing the compiled data are placed within these findings, as are the subsequent organization and calculation for analysis of information. My corroboration of data occurred when I used the method of triangulation, elaboration on similar findings transpires including further development of my sampling used (Merriam & Tisdell, 2016). Figure 3 is the first survey question with participant answers.

Figure 3

Survey Q1 (N=9) How easy was it to get the resources you needed to teach and meet the goals of the Fresh Fruits and Vegetables Program at this school?

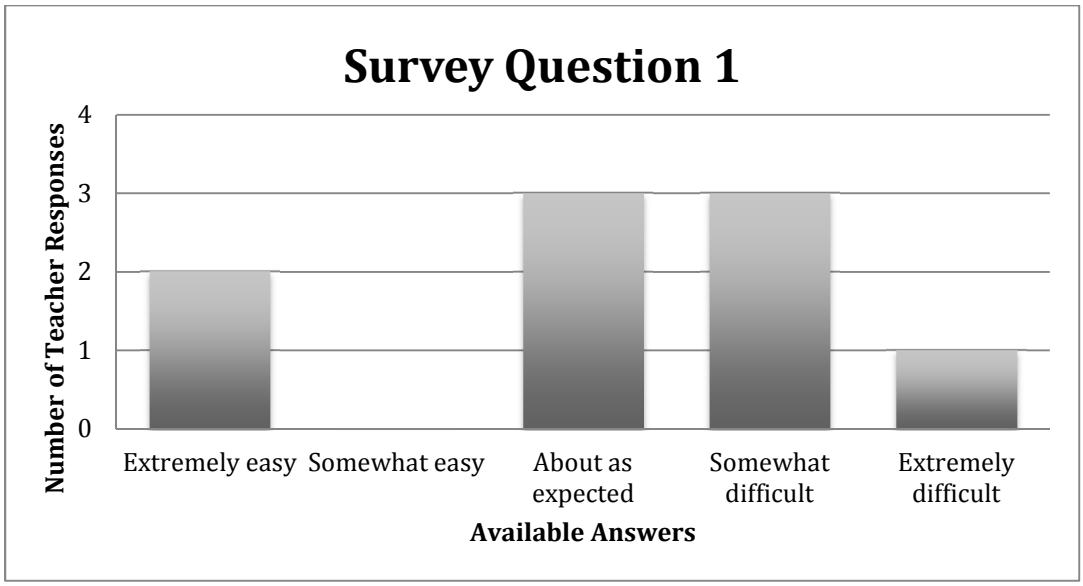


Figure 3 shows that 22.22% of the participants answered Q1, getting resources needed to teach and to meet the goals of the program as extremely easy, 0% responded as somewhat easy, 33.33% responded as about as expects, 33.33% responded somewhat difficult, and

11.11% responded as extremely difficult to get the resources needed to teach and meet the goals of the Fresh Fruits and Vegetables Program. Furthermore, participants responded to a similar question *Q9 (N=8)* What training was necessary in order to help teachers meet the goals of the Fresh Fruits and Vegetables Program? Their answers included surprise that there were goals. The teachers had four responses. What goals? Did not know about goals. I don't recall. None were given. Figure 4 is the second survey question with participant answers.

Figure 4

Survey Q2 (N=9) How well did the teachers at this school, in regards to the Fresh Fruits and Vegetables Program, collaborate with each other?

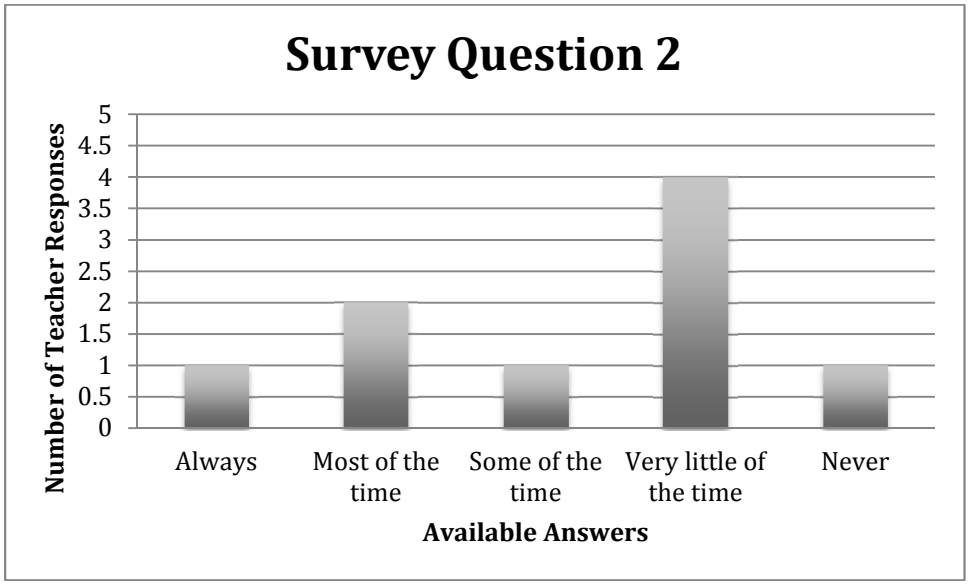


Figure 4 illustrates Q2, the teachers' perceptions of collaboration. 11.11% thought teachers collaborated all the time, 22.22% thought teachers collaborated most of the time, 11.11% thought teachers collaborated some of the time, 44.44% thought teachers collaborated very little of the time and 11.11% thought the teachers never

collaborated. Additionally, answers for Q8, What suggestions do you have for improving the program contained a suggestion for a team of teachers to be responsible for maintaining the integrity of the program. It is noted here that collaboration was not defined or limited. Many teachers spoke about discussion at a shared lunchtime, during grade level work sessions, or just casual conversations as it pertained the program. These teachers did not view this informal resource pooling as official collaboration. Figure 5 is the third survey question with participant answers.

Figure 5

Survey Q3 (N=9) How high were the expectations, at this school, for teachers meeting the goals of the Fresh Fruits and Vegetables Program?

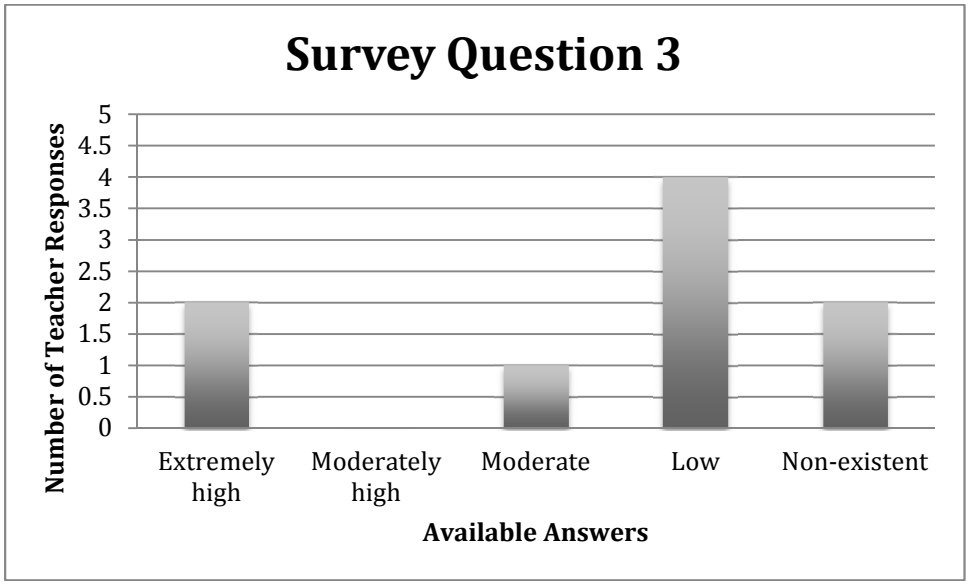


Figure 5 shows the perspective of the teachers about the expectations of meeting the goals of the FFVP. 22.22% chose extremely high, 0% chose moderately high expectations, moderate expectations were chosen by 11.11%, 44.44% chose low expectations, and 22.22% chose non-existent expectations. A recap on the percentages

show over 66% chose low to no expectations of meeting the goals of this program. This also offers insight into the minimal depth of knowledge about resources and support. With a lack of expectation comes a lack of knowledge and support. Figure 6 is the fourth survey question with participant answers.

Figure 6

Survey Q4 (N=9) How much attention did this school give towards your professional growth in regards to the Fresh Fruits and Vegetables Program?

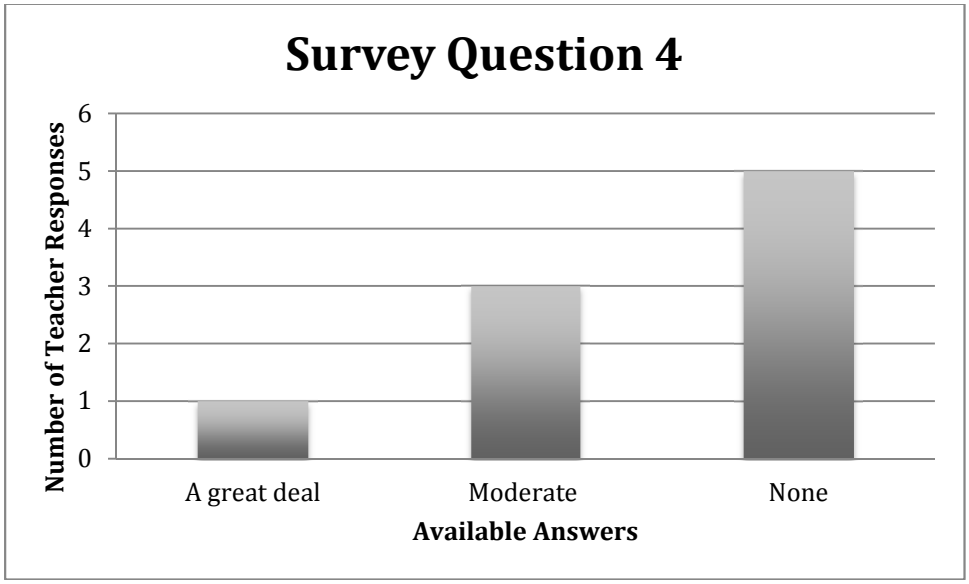


Figure 6 discloses the perceptions of the teachers about the attention paid to their professional growth with regards to the FFVP. 11.11% of the teachers felt that a great deal of attention was paid to professional development for this program. 33.33% of the teachers chose an answer of moderate attention. No attention scored 55.56% from the teachers. Again Q9, training relates back to this question with the over answers were negative about training whether through district initiatives or in-school training for this program. So, 88% of the teachers answered this with moderate to no attention. This also

offers insight into the minimal depth of knowledge about resources and support. Once again, with a lack of expectation comes a lack of knowledge and support including and influencing profession development. Figure 7 is the fifth survey question with participant answers.

Figure 7

Survey Q5 (N=9) Overall, are you satisfied with your experience at understanding and meeting the goals of the Fresh Fruits and Vegetables Program?

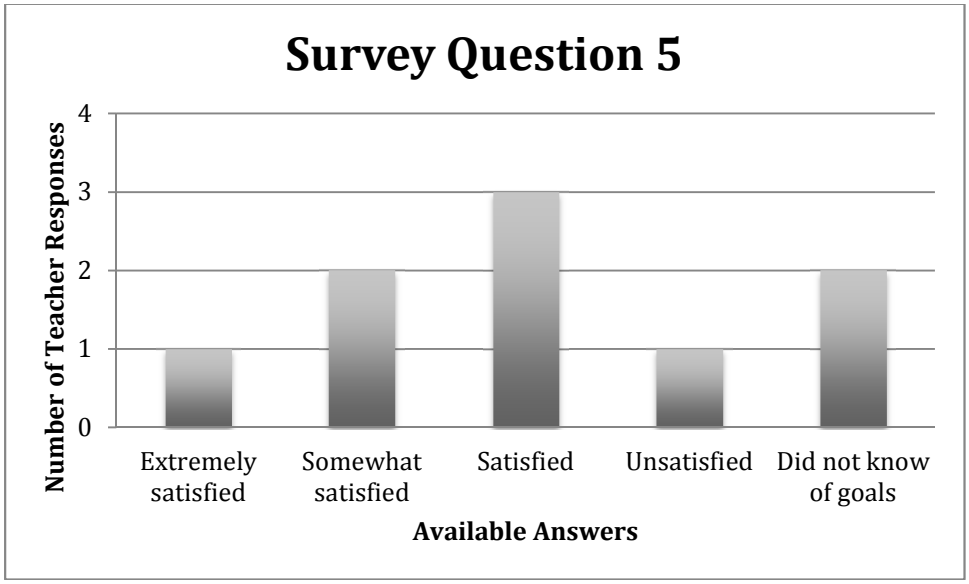


Figure 7 reveals the overall teacher satisfaction of meeting the goals of the program. 11.11% of the teachers reported being extremely satisfied with meeting the goals of the program. Somewhat satisfied was selected by 22.22% of the teachers, while 33.33% chose satisfied. Unsatisfied was selected by 11.11% and finally, 22.22% reported not knowing there were goals.

In an open response for Q10, What other comments or suggestions would you like to make about the FFVP? There were three basic comments. Would love to see it come back (4). I would go back to the program we had the first year (3). Let's do it again (1).

These teachers saw value in the program as it effected their students. Teachers struggled to implement it appropriately in their classrooms. They also handled each day and situation as it occurred. Participating in the program was beneficial to the students as well as the teachers who would participate again provided specific issues were addressed.

Fresh Fruit and Vegetable Orders from Archival Documents.

Table 5

Fruit Orders During Participation Years

	2009-2010	2010-2011	2011-2012
N Valid	25	24	19
N Missing	11	12	17
Mean	8.04	6.08	3.68
Median	4.00	5.00	4.00
Mode	1.00	2.00	1.00
Std. Dev.	9.40	4.58	2.56
Range	39.00	16.00	8.00
Minimum	1.00	1.00	1.00
Maximum	40.00	17.00	9.00
Sum	201.00	146.00	70.00

Note. Std Dev.= Standard Deviation

Table 5 presents the descriptive statistics of the fruit orders for the first year the local school participated as well as the second and final third year. Overall, 201 orders for 25 different fruits were placed during the first school year. Orders ranged from fruits ordered one time only to 40 orders for pineapple. Mode was one time only while the mean order was eight times with the median as four orders per fruit. The second year revealed overall, 146 orders for 24 different fruits were placed during the school year. Orders ranged from fruits ordered one time only, to the mode of ordered twice, to the maximum of 17 orders for pineapple. The mean order was six times and the median was five orders per fruit. The final or third year presents 70 orders for 19 different fruits placed during the school year. Orders ranged from fruits ordered one time only to nine orders for pineapple. The mode of the orders was one time only while the mean order was 3.6 times, an order cannot be placed .6 of the time so the mean is rounded up to 4, and the median was 4 orders per fruit. The missing data shows the number of types of fruit not ordered for that year that were ordered in other years for a total of 36 different types of fruit ordered over the three years of participation.

Table 6

Vegetable Orders during Participation Years

		2009-2010	2010-2011	2011-2012
	N Valid	31	18	20
	N Missing	6	19	17
Mean		5.70	7.72	3.50
Median		3.00	7.50	3.00
Mode		1.00	2.00	1.00
Std. Deviation		6.59	5.27	2.76
Range		24.00	16.00	8.00
Minimum		1.00	1.00	1.00
Maximum		25.00	17.00	9.00
Sum		177.00	139.00	70.00

Table 6 presents the descriptive statistics of the vegetable orders for the first year the local elementary school participated as well as the second and final third year. Overall, 177 orders for 31 different vegetables were placed during the first school year. Orders ranged from vegetables ordered one time only to 25 orders for carrots. Mode was one time only while the mean order was eight times with the median as four orders per fruit. The second year revealed overall, 139 orders for 18 different vegetables were placed during the school year. Orders ranged from vegetables ordered one time only to the mode of ordered twice to maximum 17 orders for celery. The mean order was six

times and the median was five orders per vegetable. The final or third year presents 69 orders for 20 different vegetables placed during the school year. Orders ranged from vegetables ordered one time only to nine orders for sweet potato. The mode of the orders was one time only while the mean order was 3.6 times, again .6 order is not realistic so the mean was rounded to 4, and the median was 4 orders per vegetable. The missing data shows the number of types of vegetable not ordered for that year that were ordered in other years for a total of 37 different types of vegetables ordered over the three years of participation. Figure 8 shows the amounts of fruits and vegetables ordered during the 3 years of program participation.

Figure 8

Fruit and Vegetable Orders during the Three Years of Participation

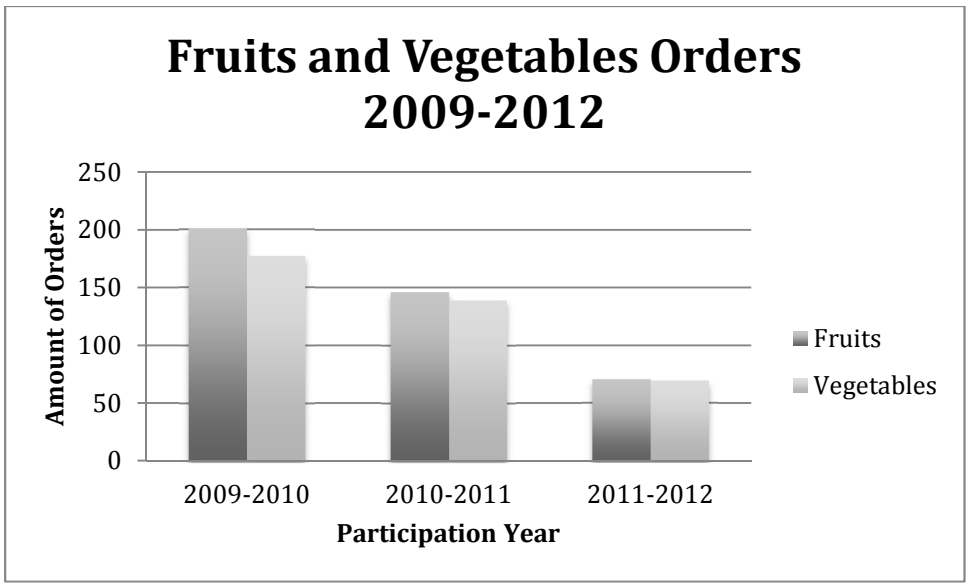


Figure 8 supports the perception participants stated in the interviews and in the surveys, the amount of fresh fruits and vegetables decreased over the 3 years as did the variety. As the table shows during the final year of participation just a little over one fourth of the

fruits and vegetables were ordered as compared to the amounts during the first year. Table 7 shows the types and amounts of vegetables ordered during the 3 years.

Table 7 Archival Documents – Fruits and Vegetable Orders 2009-2012

Number of Times and Types of Vegetables Ordered During Participation Years

Vegetables (n = 37)	2009-2010	2010-2011	2011-2012
Asparagus White	1		
Avocado		4	
Beans Green	4		1
Beet Red	1		
Broccoli	9	10	6
Broccolini	7	7	
Carrots	25	16	8
Cauliflower	6	11	7
Celery	18	17	8
Chives	1		
Cilantro	1		
Cucumbers	16	12	6
Edamame		1	
Jicama	1	8	3
Onion Green		1	
Onion Red	2		
Potato Sweet	1		9
Potato Yukon	1		
Peas Snow	6	7	1
Peas Sugar Snap	2		3
Peppers Green	10	2	
Peppers Red	5	2	1
Peppers Yellow	1		1
Radish	10	14	3
Rutabaga			1
Salad Mix	1		
Spinach	5		
Squash Acorn	1		
Squash Butternut			1
Squash Kabocha	1		
Squash Yellow		2	2
Tomato Cherry	3	4	
Tomato Grape	23	13	2
Tomato Vine	7		3
Turnips	1		1
Yams	1		
Zucchini	6	8	3
Total for Year	177	139	69

Table 8 Archival Documents – Fruits and Vegetable Orders 2009-2012

Number of Times and Types of Fruits Ordered During Participation Years

Fruits (n = 36)	2009-2010	2010-2011	2011-2012
Apples Fuji	20	9	
Apples Golden Del	1		4
Apples Gr. Smith	3		
Apples Pink Lady		2	
Apples Red Del	1	2	
Banana	21	10	
Blackberries	4	2	
Blueberries	2		
Cantaloupe	9	8	5
Cherries	3		
Grape Green	3	3	
Grape Red	7	10	2
Grapefruit		6	4
Grapples			3
Honeydew	7	11	5
Kiwi	16	14	4
Kumquat		2	
Lemon	1		1
Mango	7	7	9
Orange Blood	1		
Orange Navel		1	
Orange Valencia	9	10	5
Papaya		1	
Peaches	1	3	1
Pears	1	7	
Pears Comice			2
Pears Red			1
Pears Wedges			2
Persimmons			1
Pineapple	40	17	9
Plums	1	2	1
Pomegranate Seeds	2		
Raspberries	14	3	
Strawberries	21	11	7
Tangerines		1	
Watermelon	6	4	4
Total Fruits Ordered	201	146	70

These findings emphasis specific results based on my research purpose. Collecting, analyzing, and interpreting both qualitative and quantitative data in a convergent parallel design mixed-methods approach recorded the teachers' perceptions of the delivery, implementation, and effectiveness of the local Fresh Fruits and Vegetables Program. When analyzing the interview results the teachers reported support for the program, overall, but had frustrations with the delivery times and the interruption of instructional times. The participants had frustration with the inconsistent quality or lack of quality of the fruits and vegetables in years 2 and 3. The participants were frustrated with little to no training or instructional support providing the academic support and lessons to go along with the fruits and vegetables the students were experiencing. Whether the teachers knew they were supporting the goals of the program, the results show that indeed they were. Over the course of the 3 years of participation, 36 different types of fruits and 37 different types of vegetables were used to demonstrate healthier food choices, expand the students experience with fruits and vegetables, along with increasing the consumption of fruits and vegetables by the students. These teachers worked to make a difference in children's diets to have an impact on their present and future health.

Summary

This transactional program evaluation, combining the methodology of both qualitative and quantitative data collection of this mixed-methods study provided the strengths of each process including an in-depth look at content, processes, with interactions, and measurements of attitudes, and outcomes (Creswell & Plano Clark,

2011). A layered approach was designed to evaluate the local Fresh Fruits and Vegetables Program based on the perspectives of the adult stakeholders as it was conducted at the neighborhood rural school. This included examination, interpretation, and coding of invoices ordering the fruits and vegetables. Staff interviews and questionnaires added layers of support to the social ecological framework this research is based upon. Adding, ultimately, to the community involvement raising healthy children to become healthy adults through the education and knowledge gained by this program evaluation. Section 2 described the methodology used for the project study along with the findings addressing the research questions. The purpose of this mixed-method evaluation was to understand fully the experiences, practices, opinions, and beliefs of adult stakeholders involved in the local FFVP.

This project study was driven by an essential guiding question: What were the teachers' perceptions of the program and products served to the students through the Fresh Fruits and Vegetables Program as it was conducted at the local elementary school? Synthesizing the data from the qualitative findings showed participants opinion of the local program was the benefit to most of the students providing teachable moments whether planned or not. This program also presented classroom management challenges from utensils, interruptions, student attitude, and amount of fruit or vegetable available.

The qualitative sequence collected data through semi-structured interviews and survey questions. In keeping with the central guiding question, sub-questions answered were:

- How did the teachers, if they were aware of, report meeting the goals of the FFVP?
- How did teachers feel about their resources and knowledge of the FFVP?
- What were teachers' opinions about the FFVP?
- What behaviors did the teachers observe in their students with the FFVP?

Three major themes emerged; student behavior, time, and resources. The word "excited" was used to describe the students' behavior when the food was brought into the classroom by a majority of participants. The participants described the influence of other students on students trying new food for the first time. Students' attention span was also addressed when food was in the room. The time element included when food was delivered to the school, the classroom, and the freshness of the food. In terms of resources, participant's spoke about classroom management to pass out the food, lesson materials to use with the food, knowledge of the curriculum. Within resources, comments included amount of food, amount of waste in the second and third year. The words, "so much waste" occurred over and over. Resource comments also included lack of knowledge about the program, goals, and supports.

The quantitative sequence collected data through examination of archival FFVP documents along with Likert scale survey items. The variable in this study was the fruits and vegetables ordered through the program. In keeping with the central guiding question, sub-questions answered were:

How many types of fruits and vegetables were ordered through the FFVP?

What were the types of fruits and vegetables ordered through the FFVP? The first year fruit orders were at 201 orders for 25 different fruits, second year 146 orders for 24 types of fruits, and final participation year only 70 fruit orders of 19 different fruits. This was a decrease of 131 orders from year 1 to year 3. This was a decrease of 6 different fruits from year 1 to year 3. Vegetable orders were at 177 orders for 31 different vegetables for the first year, second year 139 orders for 18 types of vegetables, and only 69 vegetable orders of 20 different vegetables for the final participation year. This was a decrease of 108 orders from year 1 to year 3. This was a decrease of 11 different types of vegetables from year 1 to year 3. Thirty-six different types fruits and 37 different vegetables were ordered over the course of the three years of participation.

There were two content focused mixed method research questions. What results emerge from comparing the qualitative data with the data from the quantitative sequence? How does this data show what training and knowledge the teachers had available from the program? Merging the findings from the qualitative data and the quantitative data showed that based on the opinions of the participants, the answers to the survey, and the variety of fruits and vegetables available over the three years of participation did indeed support the goals of the program by creating a healthier school environments by providing healthier food choices, expanding the types of fruits and vegetables the students' experienced, and increasing the consumption of fruits and vegetables by the students. Overall, participants were supportive of the program while expressing frustration at the reduction in variety and quality and the challenges of classroom management. Whether the teachers knew they were supporting the goals of the program,

or not, they were indeed. These teachers worked to make a difference in children's diets to have an impact on their present and future health. Section 3 includes a description of the program evaluation based on the findings from my research

Section 3: The Project

Introduction

Based upon informal and impromptu discussions, local educators indicated minimal knowledge about the FFVP. Additionally, teachers from the rural schools received little professional development regarding available lessons and resources obtainable through the program. Teacher quality, along with continued training, is a key factor in student achievement and improvement (Carpenter & Sherretz, 2012). The outcome of this study was the comprehensive evaluation report presented in Appendix A. The FFVP was examined to determine its worth and to make recommendations for programmatic refinement and success for a favorable outcome (Spaulding, 2014).

Supported by the findings reported in the second section of this study, a program evaluation was designed to provide both a formative and a summative report of the local implementation. As has been done in other evaluations, the evaluation of this program by documenting the available nutritional guidance and training filled a gap in practice with the knowledge needed to create a more effective local health education program and a physically healthier local student population (Portell, Anguera, Sanduvete-Chaves, & Chacon-Moscoso, 2015). The results of this study provided educational decision makers with information so that they could make determinations leading to improved nutritional knowledge and educational experience of the student population. Additionally, local

teachers were asked to reflect, examine, and discuss the use of this program in their classrooms, resources and lessons, along with the curriculum that this program met. As teachers reflected upon their use and attitude towards this program and its success, the local program's strengths and weaknesses were revealed, allowing the local knowledge to be refined and nutritional instruction tailored to the local student and teacher population (Portell et al., 2015).

Rationale

This project study was driven by a single essential guiding question: What were the teachers' perceptions of the program and products served to the students through the Fresh Fruits and Vegetables Program as it was conducted at the local elementary school? By developing a formative and summative study, a program evaluation, that examined the perspectives of the teachers, plus collecting and analyzing data from archival food orders, this study attempted to bring to light the involvement with program components as perceived locally (Portell, et al., 2015). Local administrators compiled year-end reports as to the allocation of funds for the purchase and distribution of fresh fruits and vegetables. No study reviewing the perceptions of this program by the teacher population had been conducted (B. King, personal communication, August 22, 2011; M. Wilson, personal communication, August 22, 2011). Until this evaluation, it was unknown if the goals of the federal program were met by this local implementation.

Review of the Literature

Program evaluations are used for decision-making purposes. Stakeholders may ask, "Should we continue with this program? How can we improve this program? Are we

getting the results we need from this program?" (CDC, 2012). Research builds on general or specific knowledge of a topic or practice (Ruhe, & Boudreau, 2013; Spaulding, 2014). Consistent communication and resulting improvement underscore the importance of using standard procedures in an evaluation (Anderies & Janssen, 2013; CDC, 2015a). Evaluations of programs addressing the fidelity of implementation and associated barriers to that implementation and enable programs to operate according to program design (CDC, 2015a; Escarti., 2011; Rajan & Basch, 2012).

This literature review section includes the theoretical framework of two theories, social ecological model, and the social cognitive theory, that support the environmental influence of this program on local students and their teachers. The social ecological model was used in this project study to show how multilevel modeling used with parents, peers, schools and communities influences preadolescent decision making (Anderies & Janssen, 2013; CDC, 2013, 2015b). This model demonstrates the intricate give and take between one person or many persons and their relationships, the community of those persons, and the society as a whole (CDC, 2015b). Mâsse, and de Niet (2013) recounted the evaluation of resources and practices within a school program from different levels of sources and capacities to support the improvement of the program for the students. Other researchers noted the discontinuation and replacement of programs as evaluations gave light to other assistance programs (Krishnamurthy, 2014).

The social cognitive theory was developed to explain the individual's development of social behaviors emphasizing the connection between observation and learning (Denler, Wolters, Benzon, 2014). Boston University's School Public Health

(2014) debated the behavior change models questioning if the maintenance of behaviors is needed after focusing on initial behaviors. Further clarifying the self-efficacy in this model, the researchers focused on the influence by an individual's abilities and other personal factors as well as the environmental factors such as barriers or facilitators for continued improvement in public health. Individual can learn healthy behaviors from the people around them (Denler, et al, 2014). Additionally, Smith (2012) examined ten elementary schools with a fresh snack programs as it became available in the district. School Milk Programs have been evaluated and refined for maintenance of healthy behaviors and continue to influence healthy behaviors (Elementary School Milk Program, 2012; Miller, & Quann, 2015). Nutritional values and healthy behaviors offer students nutrition, parents, reassurances, and providers a part of the community spirit (Oshiro, 2014).

Maslow stated that basic needs (including food, water, and sleep) must be met before people can move up to higher needs. Anderies and Janssen, (2013) suggested that Maslow's original hierarchy might be in need of updating to better meet the needs of modern life reflecting on Wahba and Bridwell's (1976) paper called for additional research on the accuracy of the hierarchy. Tay and Diener (2011) tested the hierarchy in different cultures in different countries and found that Maslow's original theory is accurate and shows that the needs in life are universal. Looking at the hierarchical needs, food and the resulting nutritional value are required to be satisfied before the further levels can be attempted, such as higher levels of academic learning (Bartfield, & Anh, 2011). This study covered the history and characteristics of students from low

socioeconomic homes and low academic achievement along with the challenges of teaching students in a Title 1 school.

Search terms for this literature review, along with related research, included the terms *impoverished children and academic achievement, childhood nutrition and cultural influences, diet compared to behavior and cognition, eating behaviors in elementary school children, excitotoxins, parental food security, childhood food security, fruits and vegetable consumption, school health guidelines, healthy eating strategies, nutrition in school lunches, children with a high BMI, student achievement, life skills, Maslow, nutritional education programs, overweight students, nutritional influence by parents, parenting behaviors, educational professional development, recess, outdoor activity at school, quality of diet compared to social class, school wellness policies, student snacks at school, social ecological model, state wellness policies, behavior of students, school nutrition programs, life skills, nutritional choices of children,* and *satisfaction of life quality*. I used multiple databases in the search for current peer-reviewed articles including ERIC, Educational Research Complete, Education: a SAGE full-test database, CINAHL & MEDLINE, Cochrane Methodology Register, CQ Researcher, Expanded Academic ASAP, Proquest Central, Science Direct, and Thoreau. SmartText Searching for updated articles and topics was also used. I searched multiple subject areas. Behavior studies and psychology, health sciences and nursing, along with human services and social services were searched while education subject areas were priority.

Project Description and Goals

This evaluation provides a platform of publication to all stakeholders about the strengths and weakness of the local implementation of the FFVP. The evaluation report or white paper was written to describe the evaluation project, the program's strengths and weaknesses, and how the program operated with the program goals. It also included recommendations based on conclusions drawn from the results (Ruhe & Boudreau, 2013). Administrators locally and at other similarly situated schools may use the report as a guide to improve their own support systems for this program. The rich qualitative details support the necessary changes in the delivery of the program while the quantitative data shows the local endeavor to meet the objectives of the federal program. Those program objectives included the following:

- Create healthier school environments by providing healthier food choices.
- Expand the types of fruits and vegetables the students' experience.
- Increase the consumption of fruits and vegetables by the students.
- Make a difference in children's diets to have an impact on their present and future health (USDA, 2011).

The evaluation was broken into multiple sections (Portell, et al., 2015). These sections included figures and tables for clarity and resources used. Written with simplicity for a clear understanding of the results, the conclusions and the recommendations. Additionally, I decided to accomplish this project as a way to improve the school and the district where I am employed while obtaining an advanced degree in education. Also, as I complete this project I may be able to assist in improving the

nutritional systems in rural areas throughout my state. Other locations may also be able to use the information in this project.

Implementation

The findings of this evaluation offered me the opportunity to publish the acquired information in the form of a white paper within the school and the district. Implementing the recommendations will fall on the shoulders of the administrators, the teachers, and the district personnel involved with this program.

Recommendations

The following recommendations are based on the dissemination of the findings and conclusions of the evaluation. I compared the goals of the FFVP to the data in order to make the following recommendations:

Recommendation 1: Create a project management team of teachers and a new part-time position to oversee diversity of orders, the pre-preparation of fruit and vegetables before they arrive in classrooms, supplies, classroom delivery times, lesson plans and curriculum connections. The Science and Technology teacher committee would be a possible team for leadership and marketing. The problems documented in this research would be alleviated by a Fresh Food Facilitator position with time and resources allocated for the hands-on delivery acceptance, preparation of sliced food in child size portions, and classroom delivery. The Fresh Food Facilitator would also have the responsibility to keep teachers abreast of when deliveries will arrive so that teachers can implement the curriculum that coincides with the fruit or vegetable before it arrives. Teachers in this study were eager to participate in their classrooms with the program but the problems

they cited requires a person with the dedicated responsibility. Teachers should not, as in this study, be given a whole watermelon that they then have to take home, prepare, portion, seal, and bring back to school to pass out, clean up, and throw away some because it was too large for her class size. They should be teaching the curriculum and supervising the eating of the fresh food.

Recommendation 2: Create appropriate class size food dispersal. There must be a change from packaging as a one-size-feeds-all for a whole classroom. If the Fresh Food Facilitator used smaller sealed reusable containers and provided multiple containers based on class size it would simplify, standardize, and preserve food quality. There is a difference between the class size and the student size in a 1st grade classroom compared to a 5th grade classroom. For example, each small container could hold 6 servings for 1st grade, but that same container would be considered 3 servings for 5th grade.

Recommendation 3: Include teachers in food counts and class size. Encourage teachers to model how to eat certain fruits and vegetables, such as edamame, or how to handle distasteful food appropriately. Include teacher modeling in other food and health programs.

Recommendation 4: Continue with a formative program evaluation during the years the program is active. Components of this evaluation can be adapted for all teachers and participating support staff within the school to engage in the evaluation. For example, simple SurveyMonkey surveys could be sent to all teachers emails and results delivered to the Health and Science teacher team as well as the Fresh Food Facilitator.

In conclusion, whether the local elementary school teachers knew they were supporting the goals of the FFVP, the results showed that they were. These teachers worked to make a difference in children's diets to have an impact on their present and future health. They created a healthier school environment by opening their classrooms to the program, and by participating and modeling with their students. These teachers were setting the example of healthy eating for all students in their classroom. The local teachers appreciated how expanding the types of fruits and vegetables the students experienced impacted the student's home life. Teachers enjoyed the students' anticipation and excitement and felt it was worth providing the time and the opportunity to try new and various types. They increased the students' consumption of fresh fruits and vegetables by managing classroom time and resources to facilitate student participation. Finding a solution to poverty or food insecurity is a complex problem, feeding hungry children is not. These teachers worked to make a positive impact on students' present and future health. **The goals of the federal program were met.**

Potential Resources and Existing Supports

The evaluation report contained information that determined which components of the program were successful based on observations of the participants, which elements were effective, and which components were in need of modification. There were several resources and supports identified to implement the program evaluation report. One existing support was obtaining the goals of the existing federal program. By obtaining the federal goals, I was able to have a starting point to create my guiding questions.

An additional resource was time allotment for data collection. My

administration acknowledged and supported teachers' participation in the interviews at the school and completion of my survey. My participants acted as resources and supports as well. They provided feedback and their perspectives on the program. This allowed me to analyzed data to create the evaluation report.

To facilitate ensuing evaluations, the future evaluator could use the resources provided with this project. For example, the consent forms, interview guides, and survey are all provided and found in the Appendix section. Modifications to these resources may be made as well.

Potential Barriers

One potential barrier acknowledge from the beginning of this project was the setting or rural location and the dismissal or negativity towards a small remote site. Will this evaluation and recommendations be available to other administrators once it is made available to my district? Dietel and McKenna (2013), presented the lack of impact, "or short shelf life", educational research faces in getting into the hands of people who can use it. A suggested solution to this barrier is social media (Dietel & McKenna, 2013). This research needs to matter, and be communicated. It needs to be in the hands of the people that can use it. The district public information office personnel should be involved, the professional development department personnel need to be involved, and the communications personnel should avoid academic language and deliver the message in plain English. Research conducted within the district should not languish in the files of the Research Department.

Another potential barrier acknowledged from the beginning of this project was

the small local school with a small local faculty. Could this research be applied anywhere else? Recognizing this situation, there was a limited number of participants for the interviews and for surveys. Stratified purposeful sampling and snowball or chain sampling was used to select the interview participants providing the population for semi-structured interview protocols. Using a typical site sampling strategy to select representative teachers it was noted that the local participants were not atypical, extreme, or unusual within the school, district, or state (Patton, 2013). It was also noted that expedience and scheduling almost always figured into sample selection (Merriam & Tisdell, 2016). Therefore, both stratified purposeful sampling and snowball or chain sampling were used to select the interview population, 50% as indicated for generalization back to the local population (Creswell, 2012). Overall this generalization allowed for the accurate reflection back to immediate local classrooms (Spaulding, 2014) at this school.

Another significant potential barrier related to creating the evaluation report was my responsibility of being impartial while creating the report. It was my responsibility to report results openly and honestly, regardless of my role at the school. In the qualitative study sequence, I was the instrument of the research (Patton, 2015). I identified my relationship to the participants, my gender, race, ethnicity and socioeconomic status reveals the lens and the filter with which I viewed and recorded the participants and the information each one has to offer (Cameron, 2011; Research Salad, 2011). I kept a research journal illuminating personal reactions and reflecting on insights into self (Merriam & Tisdell, 2016). Various forms of bracketing, such as the reflective journal,

memos, or personal interviews with outside sources, mitigated any of my researcher preconceptions (Tufford & Newman, 2012). Furthermore, participant feedback and member checking diminished researcher bias (Onwuebuzie, et al., 2012).

Proposal for Implementation and Timetable

..... My development of this program evaluation and white paper evolved in four phases. Those four phases were:

Phase 1: Create Proposal for project study, obtained goals of the program and researched literature on the criteria and history of programs. Created survey, created interview guide, and set up Survey Monkey database. Submitted proposal to committee, received URR approval, successful complete of Proposal Oral Conference (Summer 2014).

Phase 2: IRB application submitted and approved (Fall 2014). District approval submitted and approved (Spring 2015).

Phase 3: Collected data concurrently, through in-person interviews, online surveys, and quantitative invoices. (Spring & Summer 2015) Analyzed data (Fall 2015).

Phase 4: Developed Evaluation Report based on the results from data (Spring 2016).

Publication of the report may be presented formally to school administrators and appropriate district personnel. The report will also be shared during a Thank You Breakfast Buffet with the full faculty and staff of the school. Future opportunities may be offered to present the evaluation and report for broader distribution, such as social media. Based on the decisions of the administrators, other evaluations may take place in the future.

The implementation timetable was determined by the district and school schedule based on the district and school's needs. The Participant Consent Form states all participants, administrators, and selected district personnel will be invited to a full staff and faculty Thank You Breakfast Buffet where the white paper will be available. It is anticipated after discussions with individual staff and district members some changes will be made for the application and administration of the program for the next school year.

Roles and Responsibilities of Student and Others

For this program evaluation, I was the researcher and the evaluator. This challenge included designing the evaluation for my specific purpose. I also collected my data through personal interviews. As the evaluator, my responsibility was to record all interviews with the help of a field notebook that contained reflective and descriptive notes to accompany data that were audio recorded. The online surveys and experiences of the participating teachers gave me more data to interpret. After the survey data was analyzed, initial conclusions were drawn. The types and amounts of fruits and vegetables invoiced were examined over the course of the program. For the quantitative sequence of this study, I examined archival school district documents recording the ordering of the fresh fruit and vegetables (Appendix G). This independent quantitative strand was conducted concurrently with the qualitative strand. The two methods were mixed when drawing conclusions and interpretations at the end of this evaluation (Creswell & Plano Clark, 2011; Wisdom & Creswell, 2013). The evaluation report was created. I designed the evaluation summary report by following a simple structure to ensure comprehensible results, conclusions, and recommendations. While holding the role as researcher and

evaluator, I was also a classroom teacher and continued as a mentor to teachers at my site. Because of my position at my school, I endeavored to be neither supportive nor critical during any portion of my research. My administrators were involved in the program evaluation by providing access to pertinent information to the evaluator prior to the analysis. Their future responsibility will be to receive and read the evaluation report and continue to provide the supports that were perceived as effective. They may make changes to those supports that were not perceived as effective to improve the program. The participants also played an important role in this program evaluation. Their responsibility was to participate openly and honestly about their knowledge and experience by providing feedback pertaining to the FFVP program. This in turn led to the creation of the evaluation report and publication of this information.

Implications Including Social Change

Local Community. This program evaluation is noteworthy for my local school. It allows administrators at the school to review my results from the evaluation of the teachers' perspectives of the FFVP at our school. My evaluation and recommendations can be used on an annual basis within the school year and may be modified and used to continue to evaluate this program as we participate. After the results are reviewed by stakeholders such as administrators, teachers, district personnel, along with community members including parents, decisions can be made to improve the perceived weaker areas of the local program and continue to provide support for practices deemed effective both locally and within the scope of the goals of the federal program. One suggestion addresses the availability of lesson plans on local and federal websites. Another

suggestion creates a dialogue among the teachers about ideas, tips, and suggestions for other teachers. Finally, create an awareness of different types of fruits and vegetables.

An implication of this program is the behaviors of the local students based on the teachers' observations. In the first year students were eager and curious about trying different foods. In the second year, interest waned as the same fruits and vegetables were received over and over again. By the third year, with repetitive fruits and vegetables, fresh food was discarded as it spoiled before it was eaten. The goals of the program were to increase and expand the type of fruits and vegetables the students experienced. This did not happen in years two and three.

Far-Reaching. In 2012, Pinata acknowledged teachers as the "critical leverage point" for improving student learning outcomes including life skills (p. 2). Overweight and obese students are at a higher risk for lower academic gains along with reduced self-esteem leading to social and psychological problems including many eating disorders (CDC, 2014). The local students developed eating and health habits, good or bad, which will persist into adulthood (UNR, 2012). The local students embraced the fresh fruits and vegetables, variety and all. Unhealthy eating can be affected; habits at home can be changed by the knowledge shared at school. Although current research shows strong educational programs and physical activity practices decrease the burden of chronic diseases, local students had few programs or access to materials to learn the basic skills needed to make healthy lifelong choices. Reducing the destructive choices mirroring the public health crisis of 1 in every 3 children documented as overweight or obese

administrators, teachers, and parents may have improved the next generation's health and educational practices.

Conclusion

This program evaluation was designed to provide both a formative and a summative report of the local implementation within a white paper. Evaluating this program by documenting the available nutritional guidance and training filled a gap in practice with knowledge needed to create a more effective local health education program and in turn a physically healthier local student population. This project provides a platform of dissemination to all stakeholders about the strengths and weakness of the local implementation of the FFVP. The white paper was written to describe the evaluation project, the program's strengths and weaknesses, and how the program operated with the program goals. It also included recommendations based on conclusions drawn from the results. No study had been conducted to review the perceptions of this program through the point of view of the teacher population (B. King, personal communication, August 22, 2011; M. Wilson, personal communication, August 22, 2011). Until this evaluation, it was unknown if the goals of the federal program were met by this local implementation. Program evaluations are used for decision-making purposes. Research builds general or specific knowledge of a topic or practice (Cameron, 2011; Spaulding, 2014). Consistent communication and resulting improvement underscore the fair process with standard procedures in an evaluation (Mertens, 2015). Evaluations of programs addressing fidelity of implementation and associated barriers to that implementation enable programs to operate according to program design (Escarti,

2011; Patton, 2015; Rajan & Basch, 2012). The findings of this project offered me the opportunity to disseminate the acquired information in the form of a white paper within the school and the district. After the results are reviewed by stakeholders such as administrators, teachers, district personnel, along with community members including parents, decisions can be made to improve the perceived weaker areas of the local program and continue to provide support for practices deemed effective both locally and within the scope of the goals of the federal program. Although current research shows strong educational programs and physical activity practices decrease the burden of chronic diseases, local students had few programs or access to materials to learn the basic skills needed to make healthy lifelong choices. By reducing the students' destructive nutritional choices, teachers and parents may have improved the next generation's health and educational practices.

Section 4 presents my project's strengths and addresses possible remediation of the limitations. Additionally, I reflect on what I have learned about scholarship in general and my own scholarship. I also review my experience with program development, leadership, and change. I assessed my experience as a project developer along with my view as a practitioner. Finally, I discuss my project's potential impact on social change ending with the implications, applications, and directions for future research whether my own or another academic researcher.

Section 4: Reflections and Conclusions

Introduction

The goal of this program evaluation was to examine the implementation of the FFVP through the perspectives of the elementary school teachers who participated in the local program. The teachers gave their perceptions about the components of the program they considered effective in addition to the components that were in need of improvement. The strengths and weaknesses of the local program were also discussed. An evaluation report was designed to present to stakeholders including conclusions and recommendations based on the findings in Section 2.

Project Strengths and Limitations

Project Strengths

This program evaluation has several strengths. One of the strengths is that the design was created to examine the strengths and weakness as perceived by the teachers who implement the program day after day. The local teachers were asked to reflect, examine, and discuss the use of this program in their classrooms, resources, and lessons, along with the curriculum that this program met. This type of evaluation had not been done before at this school for this program.

Another strength of this project is that the evaluation was designed based on the importance of sharing feedback to stakeholders. I looked at the goals of the FFVP compared to the local implementation. I looked at resources available and used by the teachers. I asked the teachers what worked and what did not work. I also looked for evidence to support the teacher's points of view.

The final strength of this program evaluation was the triangulated data collection with both quantitative data and the concurrent qualitative data. Data were triangulated to create recommendations relative to the program effectiveness. Each method of research supported and strengthened the other method of research. The intended outcome of this research involved a better understanding of the program (Howard & VanCollins, n.d.). My research involved examining participation, data collection, analysis, and interpretation. Ultimately, in the transactional program evaluation. I looked at the program from different vantage points (Volkov, 2011). This design included a specific and well-developed plan for collecting and analyzing both quantitative and qualitative data using the strengths of both approaches (Tashakkori & Teddlie, 2010). Ultimately, this design covered areas that all stakeholders needed to know. I composed a summary and explanation of findings for the stakeholders.

Recommendations for Remediation of Limitations

One limitation acknowledge from the beginning of this project was the small local school with a small local faculty. I recognized that there was a limited number of participants for the interviews and for the surveys. It was also noted that expedience and scheduling almost always figured into sample selection (Merriam & Tisdell, 2016). Therefore, both stratified purposeful sampling and snowball or chain sampling were used to select the interview population, 50% as indicated for generalization back to the local population (Creswell, 2012). Overall this generalization allowed for the accurate reflection back to immediate local classrooms (Spaulding, 2014) at this school. However, the amount of teachers interviewed did limit the amount of data collected. Increasing the

number of teachers as participants would address this limitation. An alternative would be to interview additional elementary teachers in the neighboring town's school as well and comparing the perceptions of teachers from the different schools.

Another limitation of this program evaluation is the truthfulness of the participants. Some of the participants may have told me what they though that I as the researcher, would want to hear. Participants may have answered questions in fear of me sharing specific answers with the administrators. The participants were made aware of the protection of their rights and their anonymity. One change in procedure would have a copy of the participant's rights in plain view alongside the interview questions available for constant review by each teacher.

Recommendations for Alternative Approaches

Alternatives approaches may be more apparent after the project evaluation is submitted to the stakeholders and their feedback is received. One alternative approach would be to observe classrooms as the food is delivered, passed out, consumed, and finished. How much time did it take from delivery to clean up? What happen to the leftovers? Was there a lesson taught with the food? Was there enough or was there too much? Was the packaging appropriate or a hindrance? This approach could be widened to observe how other schools, rural and urban, handle food delivery, clean up, and leftovers.

Another alternative approach would entail looking at the funding for the fruits and vegetables during the years of participation. Who placed the orders and why did they make the decisions to order what they did? Did the funds decrease? Did the price of the

fruits and vegetables increase? What changed from year to year? These are alternate strategies or approaches that can be studied in future years or addressed by the administration in light of the goals of the program.

Scholarship

My experience with this program evaluation has been the linchpin, as a doctoral student, to my growth as a researcher and as an educator. Throughout the process of creating this program evaluation, I developed an appreciation for the scholarship in the peer-reviewed literature I was able to access online. The online component allowed me unfettered access to examples or models of writing that I strived to emulate. As an educator, what I learned in my own classwork I then turned around and applied in my position as a teacher with my own students. I also had access to the struggles and successes of other doctoral students within my classes. Observing their growth, their setbacks, and their journeys through this process added to the refinement of my own scholarship. Ultimately, my growth as a scholar mirrored my growth as a professional educator. With that growth came new personal connections in organizations and departments that were needed for materials or approvals to continue on this academic journey. The online experience quickly became much more than just sitting in front of my computer.

Project Development and Evaluation

Reflecting on what I learned about project development always starts with the initial idea that I had chosen a small manageable program to develop an appropriate evaluation. I looked forward to what I would discover in my research. During the

collection of peer-reviewed articles and programs, I was overwhelmed with the magnitude of the problem I had chosen not only locally, but also nationally, and internationally. Through the advice and guidance of my committee I was able to take a worldwide concern, focus on my local problem, and create an evaluation that showed my initial observation and need.

Within the design of the program evaluation, I purposely chose to use a mixed-method design. I found literature to support the use of the design., I viewed this design as improving my own competence in both qualitative and quantitative methods. I was comfortable with the qualitative component, using the latest tools and techniques to insure quality collection and interpretation of data. I also became comfortable with the use of statistical programs to analyze the data within the quantitative component of my study.

Finally, using both the qualitative and quantitative results to answer the mixed method question, I understood the strength of using the two methods together. I was able to have an insight in to the participants' experiences and opinions. And, I was able to look at statistical information to compare the participant statements to. The use of the mixed method in this program evaluation was the correct decision for me and for this study.

Leadership and Change

One of the observations that I have made during my time in this doctoral training is the value of leadership that empowers. Authority makes me do what is demanded, empowerment leadership makes me believe (Satell, 2014). If I am empowered, I find the

drive, the vision, and the resources to complete what is now my goal. I become one of the instruments of the change.

Looking inward at the leader I have become within my school supports the idea of empowerment. As the instructional coach for my school, I was empowered to be a fountain of information and an example for the teachers I worked with. It was not my position to be the keeper of the knowledge. It was my position to find resources, ideas, and to provide practice for the teachers I was assigned to. By empowering my teachers with the knowledge and the techniques required in today's elementary classroom, my teachers empowered me to be an agent of change. I believed in what we were doing.

Analysis of Self as Scholar

My passion to becoming an acknowledge scholar includes the completion of my lifelong goal, this degree. I have a passion for learning. I have a joy of learning, and I want to apply what I have learned. I have also discovered that I can face obstacles and challenges. I can find a way around the obstacles or overcome the hurdles. My solutions may be common or obvious, but I am not afraid to do something outside the box or less common. This makes me try harder and persevere.

I have every confidence that as a leader practitioner and scholar I have increased the strength of my character in ways more valuable than just another line or entry on my resume. I believe in life-long learning. I believe in applying what I have learned seeking to be that life-long scholar.

Analysis of Self as Practitioner

As a practitioner, I am skilled, reliable, and authentic. I take opportunities to renew my passion for learning, for enhancing my skills within my profession. I carefully consider my goals and focus on the successful completion of those goals. Quality scholarship goes hand in hand with the completion of my goals. I take the opportunity to learn as much about what I am doing as I can. I take the opportunity to evaluate what others have written or have questioned about my tasks. I take the opportunity to do the best I can with the tools and the goal I am completing.

As a practitioner I am experiencing the ability and background to support or defend evaluative statements about educational programs or practices. Other professionals that have the same level of education and scholarship acknowledge my insight enabling effect change or collaboration. As a practitioner, I have also experienced that staying well-read and open to new opportunities enhances being the master practitioner that I strive to maintain.

Analysis of Self as Project Developer

My analysis of self as a project developer begins with returning to the task of planning and conducting a research project. I needed to develop a sense of direction early on in the planning to support my organizing and my vision. First, I had to choose a topic. That in itself could have been a daunting task had I not taken care to select a topic that I could live with day and night over the next several years. Then I had to develop a research question that I was truly interested in and could stay with. I had to think about what I wanted to know, and then the limits of my research. After I was focused on what

direction my research or project study would travel, I then had to write an acceptable and properly written plan including a literature review, a plan for data, including a pilot study, how I would analyze data, then report my findings, and finally reflect. Along with the writing, submitting and revision element, detailed organization, concise notes, and clear decision-making were required to move positively and productively. Despite the hurdles and challenges that I accepted, I found that at several junctures, I had little control over the progression of my study. I found myself in writing limbo when family members were in need of my attention. I found myself in procedural limbo when the school district that I conducted my research in placed a moratorium on outside research. Through perseverance and patience, I was able to move my project forward. In completion of this project with analysis of self as a project developer, I did it. It was full of growing pains, bruised egos, and earned maturation. I have accomplished what other learners strive for.

The Project's Potential Impact on Social Change

Reflection on the Importance of the Work

My project's purpose was to report the perception of the teachers who worked with the FFVP over the 3 years it was available. They reported what they thought was successful and they report what their frustrations were with this program. Acknowledging that social change must start with the individual, I chose to be that individual. I also acknowledge that in a leadership capacity I wanted to empower the teachers I worked with to feel valued and listened to when it came to programs pushed into their classroom, and the effect those programs had on their students. This study adds to the body of knowledge connecting the link between learning and nutrition. Through the activism of

the teachers included in this study, nutrition, nutritional education, and student learning and achievement will be affected. Through the dialogue the white paper from this study will create between teachers, between teachers and administrators, between administrators and district personnel, state personnel, and finally federal personnel, there will be discussions and there will be changes. As the social ecological model details, those changes will be in the teachers and their students, in the community, and beyond.

Implications, Applications, and Directions for Future Research

This project study may have positive social change because individual's needs and concern were both voiced and recorded. The publication of the project study and the white paper will give individual teachers a sense of involvement and influence in programs that affect the daily flow within their classrooms. The results of the study led to an examination of what we were doing, and what we could do better. The current study examined the teachers' perspectives in a small rural school and the implications may or may not apply to other public elementary schools regardless of size.

The application that can be made as a whole to the educational field may be the outcomes of the study such as sharing lesson resources, understanding time constraints, a teacher contribution in what is ordered and the tracking of those orders. Additionally, another application of this study could be to question other programs we have in our public schools' classroom. We can study how programs are pushed into the classroom. We can look at what the teachers are expected to do, and what do they actually end up doing. We need to question who is responsible for monitoring the programs pushed into the classrooms. Also, we should evaluate the cost of the program including the time

teachers spend on all parts of the program. In this instance, it would be not just nutritional lessons, but set-up for eating, supplies, time to eat, cleanup and disposal of plates, bowls, partially eaten food, and leftover food. We should look at how teachers are refocusing students after the nutrition break. Overall, within the educational field this study adds to the body of knowledge that teachers are the key point in student achievement.

Programs that help teachers and their students help increase student achievement and life-long healthy habits. Hungry kids do not learn as well as kids that have had a good meal. Hungry kids don't behave as well either. Classroom behaviors become more of a challenge to manage. Stressed teachers, teachers faced with a lack of resources do not teach as well as teachers empowered with a selection of resources. Teachers involved in changes and program are teachers that take ownership of the results.

A direction for future study after the conclusion of this study would be to study the new Breakfast after the Bell program that is now being implemented in elementary schools. The study could look at different models for implementation, types of foods, student achievement scores before and after the program along with teacher and parent perceptions. This program has only been available to eligible schools in the beginning of the new school year. We should evaluate these programs from the beginning and make changes early on. This new program does impact academic time, teachers, and students.

Another direction for further study would be to revisit this local school to see if the Fresh Fruits and Vegetables Program was applied for again and used. Areas to observe would include ordering, distribution, sizing of classroom packaging, teacher

involvement and perceptions, along with resources available. Where the recommendations of this study heeded?

Conclusion

The goal of this program evaluation was to view and examine the implementation of the Fresh Fruits and Vegetable Program through the perspectives of the elementary school teachers that participated in the local program. This program evaluation has several strengths including the design created specifically on a need to examine the strengths and weakness as perceived by the teachers who implement the program day after day. One limitation acknowledge from the beginning of this project was the small local school with a small local faculty. My experience with this program has been vital, as a doctoral student, to my growth as a researcher and as an educator. Reflecting on what I learned about project development always starts with the initial idea that I had chosen a small manageable program to develop an appropriate evaluation. I looked forward to what I would discover in my research. During the collection of peer-reviewed articles and programs, I was overwhelmed with the magnitude of the problem I had chosen not only locally but also nationally, and internationally as well.

One of the observations that I have made during my time in this doctoral training is the value of leadership that empowers. I take opportunities to renew my passion for learning, for enhancing my skills within my profession to empower others. I carefully consider my goals and focus on the successful completion of those goals. Through perseverance and patience, I was able to move my project forward.

The publication of this program evaluation will give individual teachers a sense of involvement and influence in programs that affect the daily flow within their classrooms. The application that can be made as a whole to the educational field may be the outcomes of the study such as sharing lesson resources, understanding time constraints, teacher contribution in what is ordered and the tracking of those orders. Additionally, another application of this study could be to question the other programs we have in our public schools' classroom. Stressed teachers, teachers faced with a lack of resources do not teach very well. Teachers empowered with a selection of resources do teach very well. When those teachers or educators partake in review of curriculum and the development of programs, they become those agents of change in their own domain and heighten the collective capacity of their personal educational environment.

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Appendix A: Program Evaluation of the local Fresh Fruits and Vegetables Program

This is a comprehensive report of the finding from an evaluation of the Fresh Fruits and Vegetables Program as conducted locally. The Executive Summary of this paper starts with background information related to the problem, which asked the question: what were the teachers' perceptions of the program and products served to the students through the Fresh Fruits and Vegetables Program as it was conducted at the local elementary school?

Executive Summary

Local elementary school students demonstrated unhealthy choices in nutrition and snack during the school day. Unhealthy snacks contain high calories, additives, preservatives, artificial colors, saturated fat, sugar, salt, and low fiber, and nutrients (Centers for Disease Control, 2014; Maffeis et al., 2012). Overweight and obese students at the local elementary school were at a higher risk for lower academic gains along with reduced self-esteem leading to social and psychological problems including a myriad of eating disorders (Carrera, 2013; Fischer, 2016). Teachers are known and acknowledged as the "critical leverage point" (Pianta, 2012, p. 2) for improving student learning outcomes including life skills. These life skills are particularly important in students demonstrating limited food security. Students with food insecurities, regardless of economic status, regularly have less access to quality foods and less parental nutritional guidance. The Fresh Fruit and Vegetable Program (FFVP) through the United States Department of Agriculture (USDA) provided access to fresh fruits and vegetables as a healthy snack option.

This study entailed a transactional program evaluation of the Fresh Fruits and Vegetables Program at a rural southwestern Title 1 elementary school. There was limited educator knowledge about the local implementation of the Fresh Fruits and Vegetables Program. Guided by the social ecological model, and the social cognitive theory, with Maslow's hierarchy of needs, research questions addressed the teachers' perceptions of the program and products served to the students through the Fresh Fruits and Vegetables Program as it was conducted at the local elementary school. This program evaluation capitalized on the strength of both qualitative and quantitative data collection techniques using a mixed-method study. This design included qualitatively, in-depth semi-structured interviews with teachers accompanied by an anonymous, web-based open-response questionnaire and quantitatively examined invoice documents determining amount and variety of fruits and vegetables dispersed during the program along with Likert scale responses from the survey. The qualitative sequence provided data by semi-structured interviews and open response survey questions, while the quantitative sequence examined all archival fruit and vegetable order invoice documents and Likert scale survey questions. Data analysis, quantitatively, used descriptive statistics. The fruit and vegetable invoices demonstrated tendencies and distribution with range, variance, and standard deviation of the data. Qualitatively, data analysis coding entailed the responses of the participants and created broad themes such as

- student behavior,
- time,
- resources.

Member checking and triangulation addressed trustworthiness. This evaluation enabled local decision makers to make educational determinations leading to better nutritional education, thus empowering students to make healthy nutritional choices and positive social change within the local community, which may result in increased academic achievement.

The Fresh Fruit and Vegetable Program handbook includes a statement of goals as an effort to impact childhood obesity by helping children learn more healthful eating habits (USDA, 2010).

Additionally, the goals of the FFVP are to:

- create healthier school environments by providing healthier food choices,
- expand the types of fruits and vegetables the students' experience,
- increase the consumption of fruits and vegetables by the students,
- positively impacts children's present and future health (USDA, 2011).

This study was conducted at the local level. I attempted to determine FFVP's effectiveness, including its influence on teachers' lessons and practices and its impact on students' food choices. I examined teachers' positive and negative perceptions of the program and evaluated the program's merit based on those perceptions. Whether the teachers knew they were supporting the goals of the program, or not, the results show that indeed they were. The local teachers created a healthier school environment by opening their classrooms to the program, and by participating and modeling with their students. The local teachers expanded the types of fruits and vegetables the students experienced by working with the students' anticipation and excitement and providing the time and the

opportunity to try new and various types. The local teachers increase the students' consumption of fresh fruits and vegetables by managing classroom time and resources to facilitate student participation. These teachers worked to make a positive impact on students' present and future health.

Intended Use and Users

The FFVP's intended use by school districts impacts students' present and future health. Fresh fruits and vegetables supplemented the district's breakfasts and lunches along with expanding the types of fruits and vegetables the students' experienced. Local administrators continued to apply for the program because students continued to choose the fresh fruits and vegetables, an important part of a healthy diet that can persist into adulthood (UNR, 2012)."

Program Description

During the 2010-2011 school year, local administrators recognized the lack of educational and nutritional support for the families at the local elementary school. Additionally, those same administrators understood the link between learning and nutrition. They applied for and received grant funding for participation in the Fresh Fruits and Vegetables Program (H. Olivie, personal communication, August 23, 2010). The designation as a Title 1 school during the 2011-2012 and 2012-2013 school year enabled the FFVP grant to be renewed.

Evaluation Focus

The purpose of this program evaluation was to understand the perspectives of the local teachers involved in the FFVP. Furthermore, I attempted to determine effectiveness

of the localized FFVP. This includes the influence on lessons and practices of the individual teachers, the impact on reaction and choices of students that teachers observed after the lesson or food experience. Finally, I examined the teachers' conclusions of positives and the negatives of participating in this program.

There were 20 teachers who participated in the FFVP available to participate in this study. Eleven teachers were selected for interviews; five teachers were from the intermediate grades, six teachers were from primary grades. Of the eleven teachers interviewed five of the teachers changed grade levels during the three years of the program. From those five teachers, three changed from primary to intermediate or intermediate to primary grades. I purposefully sampled teachers who could provide layered information, and who experienced different situations, and who could give voice to the highs and lows of participating in this program. Teachers who participated in the FFVP during the entire program were primary candidates for selection. Shared perceptions of the program as it was administered locally was the goal of this study, to benefit the health of local students for a positive social change and continued positive nutritional choices.

Review of the Literature

Program evaluations are used for decision-making purposes. Stakeholders may ask, "Should we continue with this program? How can we improve this program? Are we getting the results we need from this program?" (CDC, 2012). Research builds general or specific knowledge of a topic or practice (Ruhe, & Boudreau, 2013; Spaulding, 2014). Consistent communication and resulting improvement underscore the fair process with

standard procedures in an evaluation (Anderies & Janssen, 2013; CDC, 2015a). Evaluations of programs addressing fidelity of implementation and associated barriers to that implementation enable programs to operate according to program design (CDC, 2015a; Escarti., 2011; Rajan & Basch, 2012).

The theoretical framework of two theories, social ecological model, and the social cognitive theory, supporting the environmental influence of this program on local students and their teachers along with Maslow's hierarchy of needs. The social ecological model demonstrates supports this project study showing how multilevel modeling used with parents, peers, schools and communities influence and interact together to influence preadolescent decision making (Anderies & Janssen, 2013; CDC, 2013; CDC 2015b). This model demonstrates the intricate give and take between one person or many persons, the community of those persons, and the society as a whole demonstrating how one factor influences all levels of this model (CDC, 2015b).

The social cognitive theory was developed to explain the individual's development of social behaviors emphasizing the connection between observation, learning in mental and physical health (Denler, Wolters, Benzon, 2014). Researchers at Boston University's School Public Health (2014) debate the behavior change models questioning if the maintenance of behaviors is needed after focusing on initial behaviors. Further clarifying the self-efficacy in this model, the researchers focused on the influence by an individual's abilities and other personal factors as well as the environmental factors such as barriers or facilitators for continued improvement in public health. Individual can learn from the examples around them (Denler, et al, 2014).

Maslow formulated that basic needs (food, water, and sleep) must be met before people can move up to higher needs. Anderies & Janssen, (2013) suggested that Maslow's original hierarchy might be in need of updating to better meet the needs of modern life reflecting on Wahba & Bridwell's (1976) paper calling for additional research on the accuracy of the hierarchy. Tay & Diener (2011) tested the hierarchy in different cultures in different countries finding that Maslow's original theory is accurate showing that the needs in life are universal.

Data Sources and Method

This project study was driven by a single essential guiding question: What were the teachers' perceptions of the program and products served to the students through the Fresh Fruits and Vegetables Program as it was conducted at the local elementary school?

Qualitative Questions

- How did the teachers, if they were aware of, report meeting the goals of the FFVP?
- How do teachers feel about their resources and knowledge of the FFVP?
- What are teachers' opinions about the FFVP?
- What behaviors did the teachers observe in their students with the FFVP?

Quantitative Questions

- How many types of fruits and vegetables were ordered through the FFVP?
- What are the types of fruits and vegetables ordered through the FFVP?

Mixed Methods Questions

- What results emerge from comparing the qualitative data with the data from the quantitative sequence?
- How does this data show what training and knowledge the teachers had available from the program?

Qualitative and quantitative data were collected and analyzed for this program evaluation. This mixed method design included qualitatively semi-structured interviews with teachers accompanied by an anonymous web-based open response questionnaire and quantitatively examined invoice documents determining amount and variety of fruits and vegetables dispersed during the program along with Likert scale responses from the survey. Interviews were coded for emerging themes, while invoice examination revealed amount and variety of fruits and vegetables, and surveys disclosed both open response and Likert scale responses. Analysis included expected and unexpected coding qualitatively, along with quantitatively descriptive statistics displayed summarized data. Findings from both quantitative and qualitative data confirmed the participants' support for the program with concerns over declining variety and amount of the fruits and vegetables. Concurrently, I studied various archival school invoice documents, and recorded the fresh fruit and vegetables orders for the participating 3 years. I used descriptive statistics to document the fruits that were ordered the most, the vegetables that were ordered the most, and the fruits and vegetables that were only ordered once. Additionally, the Likert scale survey data were recorded and tables created. Finally, I created tables displaying the Likert scale survey answers and compared the qualitative and quantitative data. The quantitative data supported the participants' statements

recorded in the interviews, and the qualitative opinions and perspectives of the participants reinforced the descriptive statistics generated by the quantitative data. I noted three themes that were supported by open-response survey answers:

- student behavior,
- time,
- resources.

Results, Conclusions, and Interpretations

Overall the participants shared that they were supportive of the Fresh Fruits and Vegetables Program as it was conducted at the local school. However, there were concerns, observations, and suggestions for improving the local implementation of this program. From the suggestions and responses three major themes emerged, (a) student behavior, (b) time, and (c) resources.

Theme One: Student Behavior. A majority of the participants used the word "excited" to describe the students' behavior when food was brought into the classroom. The participants described the influence of other students on students trying new food for the first time. Participants also addressed students' attention span when food was brought into the room. **Theme Two: Time.** The time element included when the district delivered food to the school and when the food arrived in the classroom. The freshness of the food indicated elapsed time.

Theme Three: Resources. Participant's spoke about classroom management required to pass out the food, lesson materials to use with the food, and knowledge of the curriculum. Comments included amount of food, and amount of waste in the second and

third year. The words, “so much waste” occurred repeatedly by the teachers. This waste was not that the students did not like the food. To be more precise, the food was not fresh and it was too much for the younger students to expect to eat as a snack. It was not delivered in a usable format. Sliced fruits and sliced vegetables were more readily consumed than a whole apple, orange, or watermelon. Resource comments also included lack of knowledge about the program, goals, and supports.

Conclusions. All participants responded that the variety of fruits and vegetables the first year was much greater than the second and third year. The quantitative data supported the participants’ claims. Again, I focused on the goal of the federal program to increase the consumption of either fruits or vegetables by the local students. Teachers shared that if the students were given servings, then the students’ consumption of fresh fruits and vegetables were increased. The fourth goal of making a difference in the children’s diets to have an impact on their present and future health was met when teachers shared that throughout the participation years, students would return to school excited to report they had contributed to the choice of fruits and vegetables their individual families purchased at the grocery store.

Interpretations. The local teachers created a healthier school environment by opening their classrooms to the program, and by participating and modeling with their students. The local teachers expanded the types of fruits and vegetables the students experienced by working with the students’ anticipation and excitement and providing the time and the opportunity to try new and various types. The local teachers increase the students’ consumption of fresh fruits and vegetables by managing classroom time and

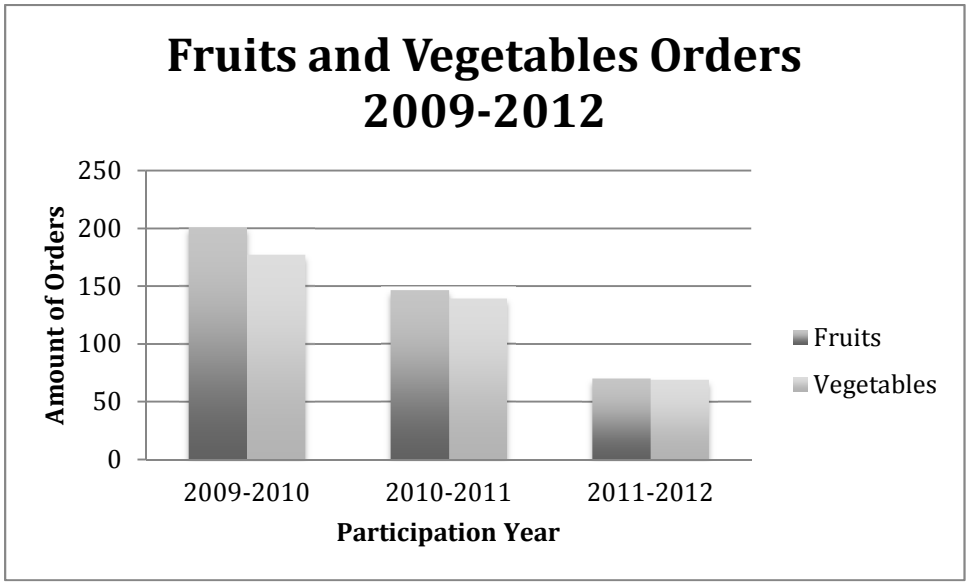
resources to facilitate student participation. These teachers worked to make a positive impact on students' present and future health. Whether the teachers knew they were supporting the goals of the program, the results show that indeed they were. They were not, however, using the online curriculum and available materials because they did not have training or knowledge of these items.

These findings emphasis specific results based on my research purpose. Collecting, analyzing, and interpreting both qualitative and quantitative data in mixed methods approach recorded the teachers' perceptions of the delivery, implementation, and effectiveness of the local Fresh Fruits and Vegetables Program. When analyzing the interview results the teachers reported support for the program overall. They did have frustrations with the delivery times and the interruption of instructional times. Additionally, there were persistent problems with the inconsistent quality, or lack of quality of the fruits and vegetables in years 2 and 3. Finally, with little to no training or instructional support providing the academic support and lessons to go along with the fruits and vegetables the students were experiencing. These teachers worked to make a positive impact on students' present and future health.

Figure 1 supports the perception participants stated in the interviews and in the surveys, the amount of fresh fruits and vegetables decreased over the 3 years as did the variety. As the table shows during the final year of participation just a little over one fourth of the fruits and vegetables were ordered as compared to the amounts during the first year.

Figure 1

Fruit and Vegetable Orders during the 3 Years of Participation



Overall, 36 different types of fruit and 37 different types of vegetable were ordered within the three years of participation. Not all 36 fruits types and not all 37 vegetables types were ordered each year. Then, during the coding and development of themes from the qualitative interviews of the participants three strong themes were noted involving (a) student behavior or influence, (b) time, and (c) resources, as shown in Table 1.

Table 1

Thematic Categories

Theme	Comments (n=11)	Quote	Outlier
Student Behavior	Excited when food delivered to room (11)	"It gave them an opportunity to try food they never had before."	This was breakfast for more that just a few of my students
	Anticipation of food (7)		
	Student influence and Attitude (6)		
	Attention Span (11)		
Time	Instructional time shortened (11)	"By the third year I did a whole lot better managing with this program."	Down time for kids to relax and reenergize
	Classroom management (6)		
	Interruptions (7)		
Resources	Amounts of food (6)	"To hand it out I had to get organized!"	No more ranch dressing. I didn't think my floor was ever going to be the same again.
	Prepare lesson plans/curriculum (8)		
	Supplies and Waste (7)		

Table 2

Descriptive Details from Participant Interview

Research Question	Common or Typical Statements With Themes	Least Common Statements With Themes
How do teachers feel about their resources and knowledge of the FFVP?	Worthwhile-Influence on Students Great- Resources In the future-Influence on Students Enlightening-Time Helpful-Time	Breakfast for more than a few students-Influence
How did the teachers, if they were aware of, report meeting the goals of the FFVP?	Need more information-Resources Delivery Communicate expectations-Resources Form a team-Resources /Time What goals?-Resources /Time	No more ranch dressing-Time I don't think there was a down side-Influence
What are teachers' opinions about the FFVP?	Buy locally-Resources Adjust amounts-Influence on Students Monitor Quality-Influence on Students	Positive peer pressure- Influence
What behaviors did the teachers observe in their students with the FFVP?	Excited-Influence on Students Curious-Resources Did not like-Influence/Resources Anticipation-Influence/Resources	Down time for students-Time Who can eat all those Radishes?-Resources

These themes were supported and strengthened by the qualitative open response answers from the survey. It was noted that the answers to the survey mirrored the opinions expressed in the interviews.

Table 3

Survey Questions with Most Frequent and Least Frequent Response Submitted

Qualitative Questions	Most Frequent Response	Least Frequent Response	Theme
1. How easy was it to get the resources you needed to teach and meet the goals of the FFVP at this school?	As expected or somewhat difficult	Easy	Resources
2. How well did the teachers at this school in regards to the FFVP collaborate with each other?	Very little	Always	Time, Resources
3. How high were the expectations, at this school, for teachers meeting the goals of the FFVP?	Very low	Moderate	Resources
4. How much attention did this school give towards your professional growth in regards to the FFVP?	No attention	A great deal	Resources
5. Overall, are you satisfied with your experience at understanding and meeting the goals of the FFVP?	Satisfied or did not know about goals	Extremely satisfied	Time, Resources, Influence

The open-ended survey response answers were notably shorter, as expected, than the interview answers as shown in Table 4

Table 4

Quantitative Survey Questions with Most Frequent and Least Frequent Response Submitted

Quantitative Questions Open Response	Most Frequent Response	Least Frequent Response	Theme
6. What are the strengths of the FFVP?	Variety of fresh fruits and vegetables	Student concentration	Influence
7. What are the weaknesses of the FFVP?	Time, quality, waste	Preservatives added	Time, Resources
8. What suggestions do you have for improving the FFVP?	Time and quality	Form a team	Resources
9. What training was necessary in order to help teachers meet the goals of the FFVP?	None	In school	Resources
10. What other comments or suggestions would you like to make about the FFVP at our school?	Bring it back like the first year	Assign responsible person for staff development	Influence, Time, Resources

Figure 2

Survey Q1 (N=9) How easy was it to get the resources you needed to teach and meet the goals of the Fresh Fruits and Vegetables Program at this school?

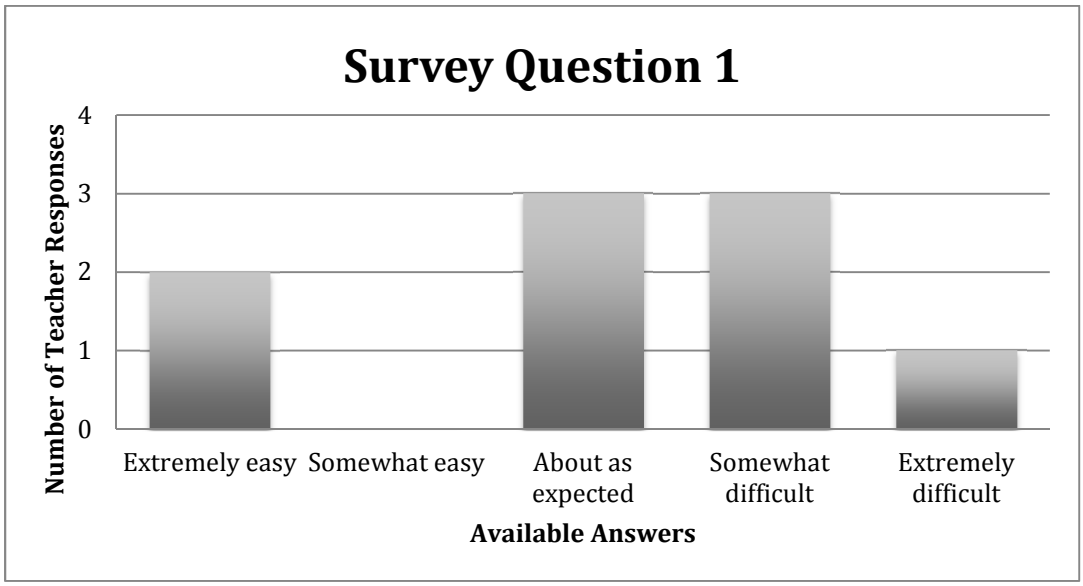


Figure 3

Survey Q2 (N=9) How well did the teachers at this school, in regards to the Fresh Fruits and Vegetables Program, collaborate with each other?

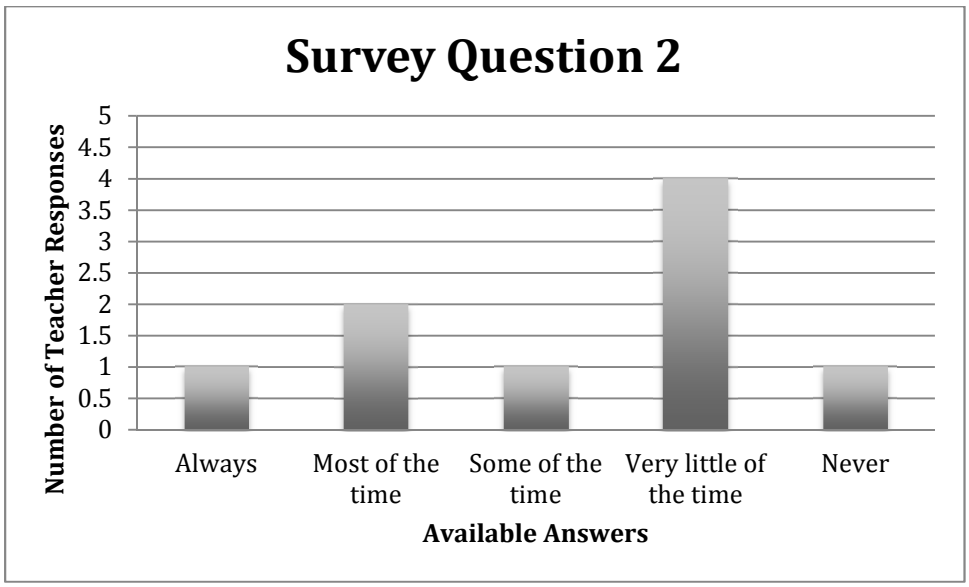


Figure 4

Survey Q3 (N=9) How high were the expectations, at this school, for teachers meeting the goals of the Fresh Fruits and Vegetables Program?

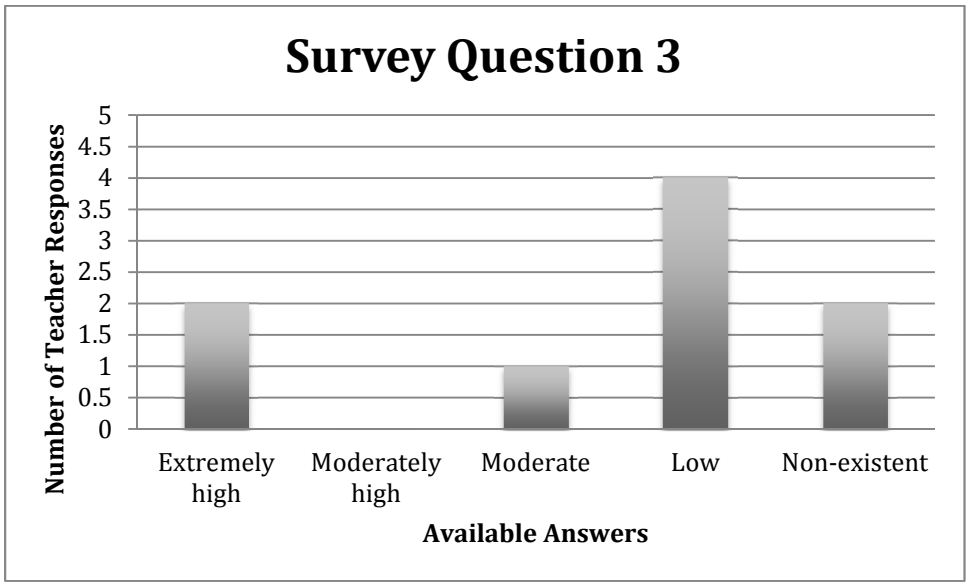


Figure 5

Survey Q4 (N=9) How much attention did this school give towards your professional growth in regards to the Fresh Fruits and Vegetables Program?

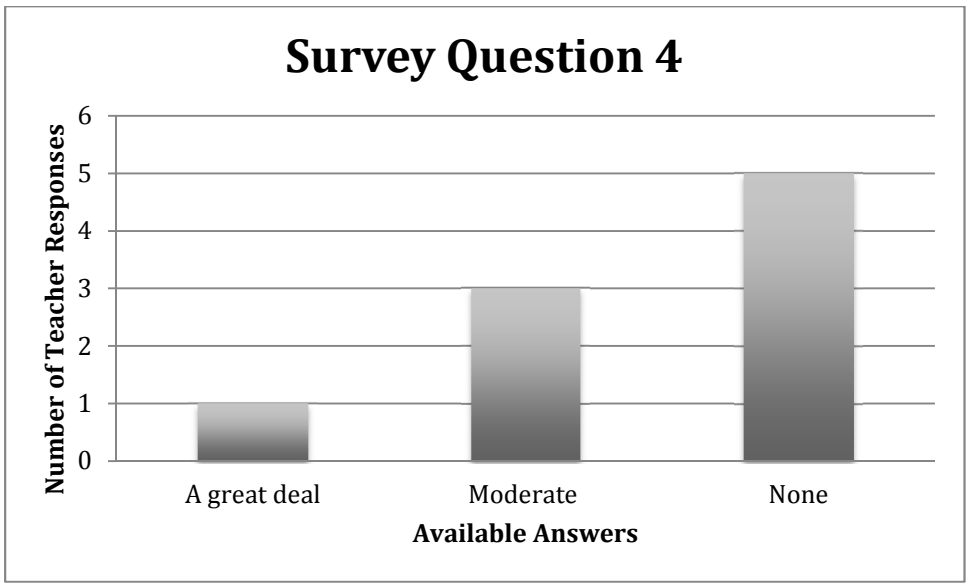
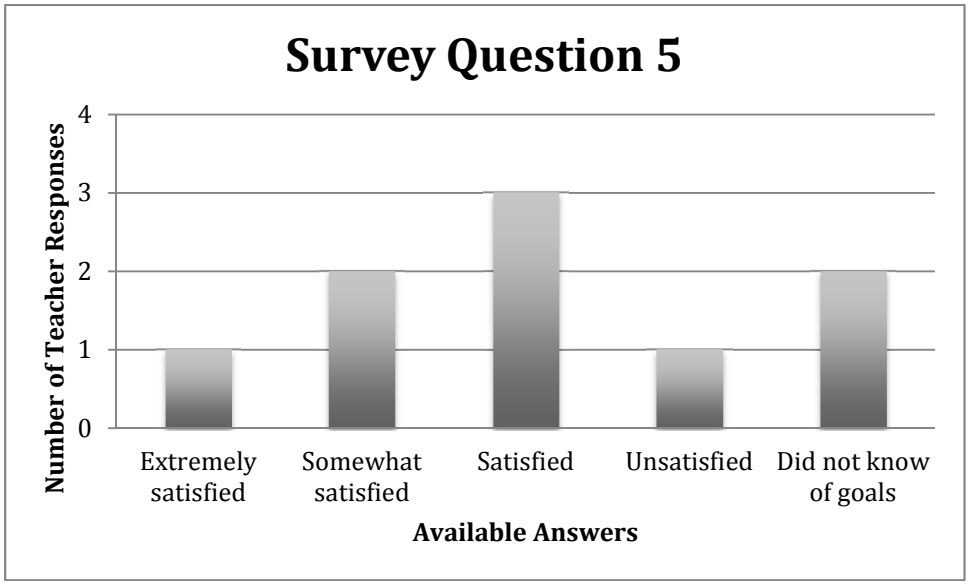


Figure 6

Survey Q5 (N=9) Overall, are you satisfied with your experience at understanding and meeting the goals of the Fresh Fruits and Vegetables Program?



Whether the teachers knew they were supporting the goals of the program, or not, the results show that indeed they were.

Table 5

Fruit Orders During Participation Years

		2009-2010	2010-2011	2011-2012
	N Valid	25	24	19
	N Missing	11	12	17
Mean		8.04	6.08	3.68
Median		4.00	5.00	4.00
Mode		1.00	2.00	1.00
Std. Dev.		9.40	4.58	2.56
Range		39.00	16.00	8.00
Minimum		1.00	1.00	1.00
Maximum		40.00	17.00	9.00
Sum		201.00	146.00	70.00

Note. Std Dev.= Standard Deviation

Table 5 presents the descriptive statistics of the fruit orders for the first year the local school participated as well as the second and final third year. Over the course of the three years of participation 36 different types of fruits and 37 different types of vegetables were used to demonstrate healthier food choices, expand the students experience with fruits and vegetables, along with increasing the consumption of fruits and vegetables by the students.

Table 6

Vegetable Orders during Participation Years

	2009-2010	2010-2011	2011-2012
N Valid	31	18	20
N Missing	6	19	17
Mean	5.70	7.72	3.50
Median	3.00	7.50	3.00
Mode	1.00	2.00	1.00
Std. Deviation	6.59	5.27	2.76
Range	24.00	16.00	8.00
Minimum	1.00	1.00	1.00
Maximum	25.00	17.00	9.00
Sum	177.00	139.00	70.00

Table 6 presents the descriptive statistics of the vegetable orders for the first year the school participated as well as the second and final third year. Overall, 177 orders for 31 different vegetables were placed during the first school year. Orders ranged from vegetables ordered one time only to 25 orders for carrots. Mode was one time only while the mean order was eight times with the median as four orders per fruit. The second year revealed overall, 139 orders for 18 different vegetables were placed during the school year. Orders ranged from vegetables ordered one time only to the mode of ordered twice to maximum 17 orders for celery. The mean order was six times and the median was five

orders per vegetable. The final or third year presents 69 orders for 20 different vegetables placed during the school year. Orders ranged from vegetables ordered one time only to nine orders for sweet potato. The mode of the orders was one time only while the mean order was 3.6 times, again .6 order is not realistic so the mean was rounded to 4, and the median was 4 orders per vegetable. The missing data shows the number of types of vegetable not ordered for that year that were ordered in other years for a total of 37 different types of vegetables ordered over the three years of participation.

Table 7 Archival Documents – Fruits and Vegetable Orders 2009-2012

Number of Times and Types of Vegetables Ordered During Participation Years

Vegetables (n = 37)	2009-2010	2010-2011	2011-2012
Asparagus White	1		
Avocado		4	
Beans Green	4		1
Beet Red	1		
Broccoli	9	10	6
Broccolini	7	7	
Carrots	25	16	8
Cauliflower	6	11	7
Celery	18	17	8
Chives	1		
Cilantro	1		
Cucumbers	16	12	6
Edamame		1	
Jicama	1	8	3
Onion Green		1	
Onion Red	2		
Potato Sweet	1		9
Potato Yukon	1		
Peas Snow	6	7	1
Peas Sugar Snap	2		3
Peppers Green	10	2	
Peppers Red	5	2	1
Peppers Yellow	1		1
Radish	10	14	3
Rutabaga			1
Salad Mix	1		
Spinach	5		
Squash Acorn	1		
Squash Butternut			1
Squash Kabocha	1		
Squash Yellow		2	2
Tomato Cherry	3	4	
Tomato Grape	23	13	2
Tomato Vine	7		3
Turnips	1		1
Yams	1		
Zucchini	6	8	3
Total for Year	177	139	69

Table 8 Archival Documents – Fruits and Vegetable Orders 2009-2012

Number of Times and Types of Fruits Ordered During Participation Years

Fruits (n = 36)	2009-2010	2010-2011	2011-2012
Apples Fuji	20	9	
Apples Golden Del	1		4
Apples Gr. Smith	3		
Apples Pink Lady		2	
Apples Red Del	1	2	
Banana	21	10	
Blackberries	4	2	
Blueberries	2		
Cantaloupe	9	8	5
Cherries	3		
Grape Green	3	3	
Grape Red	7	10	2
Grapefruit		6	4
Grapples			3
Honeydew	7	11	5
Kiwi	16	14	4
Kumquat		2	
Lemon	1		1
Mango	7	7	9
Orange Blood	1		
Orange Navel		1	
Orange Valencia	9	10	5
Papaya		1	
Peaches	1	3	1
Pears	1	7	
Pears Comice			2
Pears Red			1
Pears Wedges			2
Persimmons			1
Pineapple	40	17	9
Plums	1	2	1
Pomegranate Seeds	2		
Raspberries	14	3	
Strawberries	21	11	7
Tangerines		1	
Watermelon	6	4	4
Total Fruits Ordered	201	146	70

Use, Dissemination, Sharing

Planning for use is directly tied to the identified purposes of the evaluation and program with stakeholder priorities. Stakeholders include the teachers and their students, parents, local school administrator and district administrators located outside the local school such as food service personnel. Dissemination of this position paper will be during the Thank You buffet for the staff and faculty while a copy will be sent to the research department of the school district. Copies will also be available for stakeholders not able to attend the concluding activity.

Recommendations

The following recommendations are based on the dissemination of the findings and conclusions of the evaluation. I compared the goals of the Fresh Fruits and Vegetables Program to the data in order to make the following recommendations. Recommendation 1: Create a project management team of teachers and a new part-time position to oversee diversity of orders, the pre-preparation of fruit and vegetables before they arrive in classrooms, supplies, classroom delivery times, lesson plans and curriculum connections. The Science and Technology teacher committee would be a possible team for leadership and marketing. The problems documented in this research would be alleviated by a Fresh Food Facilitator position with time and resources allocated for the hands-on delivery acceptance, preparation of sliced food in child size portions, and classroom delivery. The Fresh Food Facilitator would also have the responsibility to keep teachers abreast of when deliveries will arrive so that teachers can implement the curriculum that coincides with the fruit or vegetable before it arrives. Teachers in this

study were eager to participate in their classrooms with the program but the problems they cited requires a person with the dedicated responsibility. Teachers should not, as in this study, be given a whole watermelon that they then have to take home, prepare, portion, seal, and bring back to school to pass out, clean up, and throw away some because it was too large for her class size. They should be teaching the curriculum and supervising the eating of the fresh food.

Recommendation 2: Create appropriate class size food dispersal. There must be a change from packaging as a one-size-feeds-all for a whole classroom. If the Fresh Food Facilitator used smaller sealed reusable containers and provided multiple containers based on class size it would simplify, standardize, and preserve food quality. There is a difference between the class size and the student size in a 1st grade classroom compared to a 5th grade classroom. For example, each small container could hold 6 servings for 1st grade, but that same container would be considered 3 servings for 5th grade.

Recommendation 3: Include teachers in food counts and class size. Based on teacher observations and comments, encourage teachers to model how to eat certain fruits and vegetables, such as edamame, or how to handle distasteful food appropriately. Include teacher modeling in other food and health programs.

Recommendation 4: Continue with a formative program evaluation during the years the program is active. Components of this evaluation can be adapted for all teachers and participating support staff within the school to engage in the evaluation. For example, simple SurveyMonkey surveys could be sent to all teachers emails and results delivered to the Health and Science teacher team as well as the Fresh Food Facilitator.

In conclusion, whether the local elementary school teachers knew they were supporting the goals of the program, the results showed that indeed they were. These teachers worked to make a difference in children's diets to have an impact on their present and future health. They created a healthier school environment by opening their classrooms to the program, and by participating and modeling with their students. Setting the example of healthy eating for all students in their classroom. The local teachers appreciated how expanding the types of fruits and vegetables the students experienced impacted the student's home life. Teachers enjoyed the students' anticipation and excitement and felt it was worth providing the time and the opportunity to try new and various types. They increased the students' consumption of fresh fruits and vegetables by managing classroom time and resources to facilitate student participation. Finding a solution to poverty or food insecurity is a complex problem, feeding hungry children is not. These teachers worked to make a positive impact on students' present and future health. **The goals of the federal program were met.**

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Appendix B: Interview Schedule

Week One: Wednesday, Pre-K; Thursday, 1st Grade; Friday, 2nd Grade

Week Two: Wednesday, 3rd Grade; Thursday, 4th Grade; Friday 5th Grade

Week Three: Wednesday, Pre-K; Thursday, 1st Grade; Friday, 2nd Grade

Week Four: Wednesday, 3rd Grade; Thursday, 4th Grade; Friday 5th Grade

Week Five: Wednesday, Office Manager; Thursday Food Service Supervisor

Week Six: Confirm or Disconfirm Sampling

Appendix C: Interview Protocol Questions

1. How would you describe the Fresh Fruit and Vegetable program here at this elementary school?
2. How would you describe the influence on the students by this program?
3. What are the students' reactions when the food comes into your classroom?
4. What type of lesson plan support have you been made aware of, or used, in connection with the FFVP program?
5. How do you see this program affecting you as a teacher in your classroom?
6. How do you think this program influence student performance?
7. How do you thing this program helps students make healthy eating choices?
8. How would you explain this program to a colleague outside of this school?
9. What are some of the frustrations you have encountered with this program?
10. What do you think are the positives in this program?
11. What do you think are the negatives in this program?
12. What suggestions do you have for improving the Fresh Fruits and Vegetables Program?
13. What else would you like to tell me about this program?

Appendix D: Sample Interview Transcript with Coding

Coding	Transcription	Themes & Observations
	1. Describe program	
	2. Influence on students	
	3. Student reactions	
	4. lesson plans	
	5. Effect to teacher	
	6. student performance	
	7. Healthy eating choices	
	8. Explain program to someone else	
	9. Frustrations	
	10. Positives of program	

	11. Negatives of programs	
	12. Suggestions	
	13 Other Comments	

Appendix E: Program goal compared to available resources

Quantitative Matrix	FFVP Goal 1 Provide healthier snacks	FFVP Goal 2 Expand student fruit & vegetable experience	FFVP Goal 3 Increase student fruit & vegetable consumption	FFVP Goal 4 Impact present & future student health
Fruits orders and delivered				
Vegetables ordered and delivered				

Appendix F: Fruit & Vegetable Orders

Quantitative Matrix (Types of Fruits ordered)	Ordered 1 time	Ordered multiple times		

Quantitative Matrix (Types of Vegetables ordered)	Ordered 1 time	Ordered multiple times		

Appendix G: Survey Questionnaire

Over the course of the Fresh Fruits and Vegetables Program:

1. How easy is it to get the resources you need to teach and meet the goals of the Fresh Fruits and Vegetables Program at this at this school?

   Extremely easy – Not at all easy (5pt scale)

2. How well did the teachers at this school, in regards to the Fresh Fruits and Vegetables

   Program, collaborate with each other? Extremely well – Not well at all (5pt scale)

3. How high are the expectations for teachers at meeting the goals of the Fresh Fruits and Vegetables Program? Extremely high to Not high at all (5pt scale)

4. How much attention did this school give to your professional growth in regards to the Fresh Fruits and Vegetables Program? A great deal to None at all (5pt scale)

5. Overall, are you satisfied with your experience at understanding and meeting the goals of the Fresh Fruits and Vegetables program? Extremely to Didn't know goals (5pt scale)

6. What are the strengths of the Fresh Fruits and Vegetables Program? Open Response

7. What are the weaknesses of the Fresh Fruits and Vegetables Program? Open Response

8. What suggestions do you have for improving the Fresh Fruits and Vegetables Program? Open Response

9. What training was necessary in order to help teachers meet the goals of the Fresh Fruits

and Vegetables Program? Open Response

10. What other comments or suggestions would you like to make about the Fresh Fruits and Vegetables Program at our school? Open Response

(SurveyMonkey K-12 Teacher Feedback, Healthcare, & Market Research Survey, 2013)

Appendix H

Assessment, Accountability, Research, and School Improvement • Research Dept.
4212 Eucalyptus Ave. • Las Vegas, NV 89121 • (702) 799-5195 • FAX (702) 799-0292

CCSD
CLARK COUNTY
SCHOOL DISTRICT

March 19, 2015

Patricia M. Moore
744 Pinnacle Court
Mesquite, NV 89027

Dear Patricia:

The Research Review Committee office of the Clark County School District has received your request entitled: *Fresh Fruits and Vegetables in a Rural Elementary School, A Program Evaluation.* We are pleased to inform you that your sponsored proposal has been approved with the following provisos:

1. Participation is strictly and solely on a voluntary basis,
2. Provide letter of acceptance from any additional principals who agree to be involved with the study.

This research protocol is approved for a period of one year from the approval date. The expiration of this protocol is March 17, 2016. If the use of human subjects described in the referenced protocol will continue beyond the expiration date, you must provide a letter requesting an extension *one month* prior to the date of expiration. The letter must indicate whether there will be any modifications to the original protocol. If there is any change to the protocol it will be necessary to request additional approval for such change(s) in writing to the Research Review Committee.

Please provide a copy of your research findings to this office upon completion. We look forward to the results. If you have any questions or require assistance please do not hesitate to contact this office at (702) 799-5195 or e-mail at lapitch@interact.ccsd.net.

Sincerely,

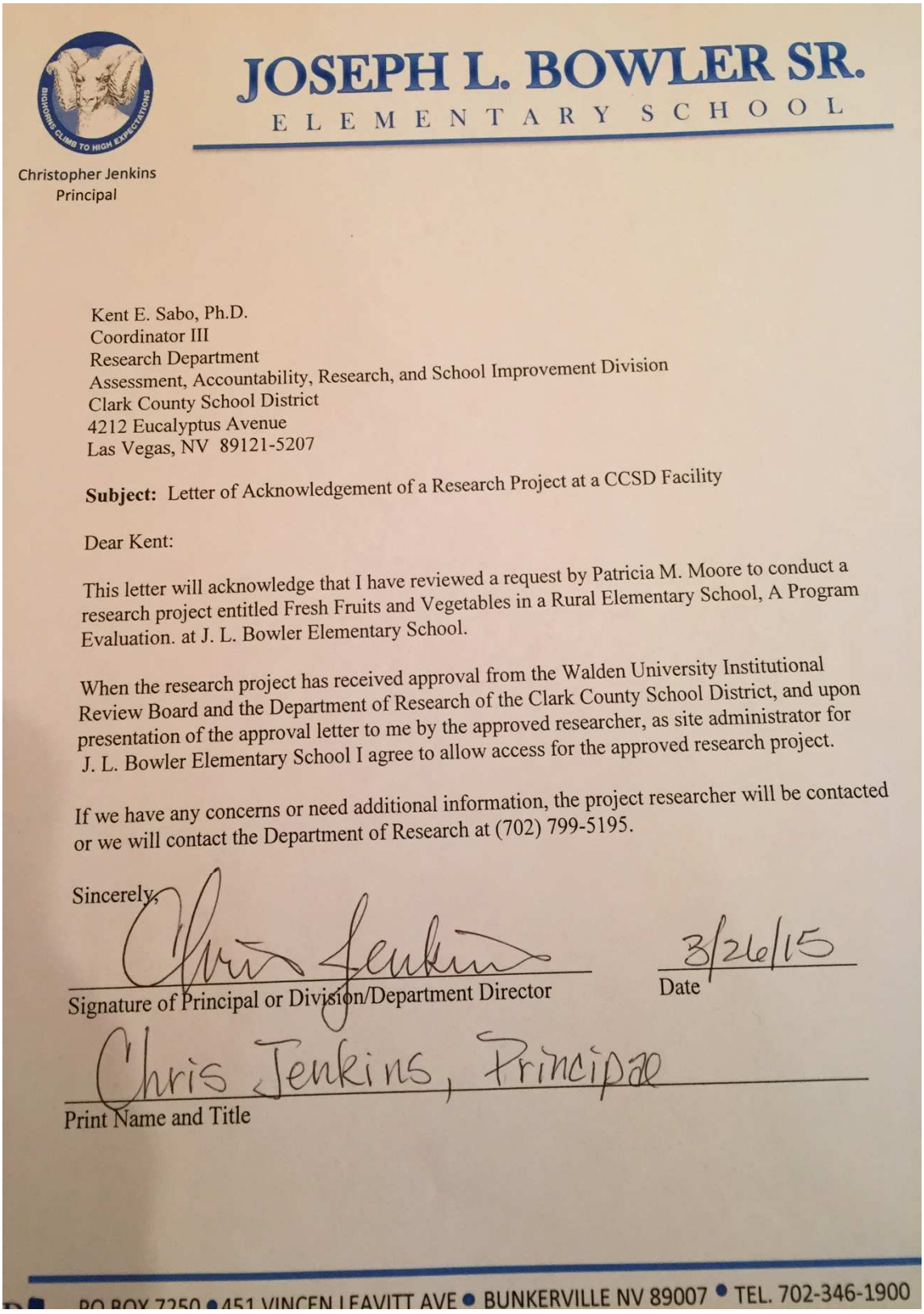
Lisa A. Pitch, M.A.
Coordinator III
Department of Accountability & Research
Co-Chair, Research Review Committee

Kent E. Sabo, Ph.D.
Coordinator III
Department of Accountability & Research
Co-Chair, Research Review Committee

clk
c: Virginia K. Beck – SPONSOR
Michael Wilson - Support
Research Review Committee

RRC-39-2015

Appendix I



JOSEPH L. BOWLER SR.
ELEMENTARY SCHOOL

Christopher Jenkins
Principal

Kent E. Sabo, Ph.D.
Coordinator III
Research Department
Assessment, Accountability, Research, and School Improvement Division
Clark County School District
4212 Eucalyptus Avenue
Las Vegas, NV 89121-5207

Subject: Letter of Acknowledgement of a Research Project at a CCSD Facility

Dear Kent:

This letter will acknowledge that I have reviewed a request by Patricia M. Moore to conduct a research project entitled Fresh Fruits and Vegetables in a Rural Elementary School, A Program Evaluation. at J. L. Bowler Elementary School.

When the research project has received approval from the Walden University Institutional Review Board and the Department of Research of the Clark County School District, and upon presentation of the approval letter to me by the approved researcher, as site administrator for J. L. Bowler Elementary School I agree to allow access for the approved research project.

If we have any concerns or need additional information, the project researcher will be contacted or we will contact the Department of Research at (702) 799-5195.

Sincerely,

Chris Jenkins — 3/26/15

Signature of Principal or Division/Department Director — Date

Chris Jenkins, Principal

Print Name and Title

PO BOX 7250 • 451 VINCEN LEAVITT AVE • BUNKERVILLE NV 89007 • TEL. 702-346-1900