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The Role of Nutrition Education and Active Choice to Increase Fruit and Vegetable Consumption Among Second Grade Students During Lunchtime

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THE ROLE OF NUTRITION EDUCATION AND ACTIVE CHOICE TO INCREASE FRUIT AND VEGETABLE CONSUMPTION AMONG SECOND GRADE STUDENTS DURING LUNCH

A THESIS

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For the degree in Nutrition and Food Science: Nutrition Education

By

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Abstract

Fruit and vegetable intake within the United States is considerably lower than the standards set by the United States Department of Agriculture. With this information, there is no surprise that these rates are especially low for school aged children. Although many studies have tried to incorporate programs that would effectively increase the consumption of fruits and vegetables among youngsters, many have fallen short with being able to sustain consumption over time. This study provided a way to increase fruit and vegetable consumption during lunchtime for second grade students by using a dual module of the Social Cognitive Theory and active choice principles.

A total of 90 participants (ages 7 and 8) were used in this study; 47 made up the experimental group while 43 made up the control group. During this nine-week study, the experimental group received four lessons based on nutrition education while the control group did not receive any nutrition education lessons. Both groups received an active choice component where they were able to choose between two fruits and two vegetables. A hypothesis was made that the role of nutrition education would increase consumption of fruits and vegetables compared to the group that did not receive any lessons. Intervention days were divided into two sessions to determine effectiveness of the program.

Although some results revealed significant relationships, the hypothesis had limited validity. Future research is still needed to ensure the effectiveness of this design. It is important to recognize that although the nutritional lessons did not cause the experimental group to consume more fruits and vegetables than the control group, both

groups actively participated in intervention days and increased their overall fruit and vegetable consumption.

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Table of Contents

Chapter 1: Introduction

Despite the slight decline of obesity rates among preschool aged children in the United States, childhood obesity still remains at an alarmingly high rate (CDC, 2014). With this information, it is not surprising that the consumption of fruits and vegetables among our youth is considerably lower than the guidelines provided by the United States Department of Agriculture (USDA) through the resources of MyPlate (CDC, 2014). According to a press release from the Center of Disease Control and Prevention (CDC) in August of 2014, children 2 to 18 years of age did not consume the recommended amounts of fruits and vegetables based on age, gender and activity level from the years of 2003-2010. Additionally, from 2007-2010, sixty percent of children did not consume an adequate amount of daily fruits while a staggering ninety-three percent did not consume enough vegetables daily (CDC, 2014).

With the rise of dual-working households, it is now a shared responsibility to teach our youth of proper nutrition education during both school hours and at home (Witt & Dunn, 2012). The form of which youngsters consume food is also important to address, where most will consume fruit in the form of juice and vegetables as part of a sandwich (lettuce an tomato) and fried potatoes (chips and or French fries) (Perry et al., 2004). A previous study disclosed that French fries represented nearly twenty-five percent of vegetables that were consumed by both children and adolescents (Witt & Dunn, 2012). Moreover, a diet that includes an adequate amount of fruits and vegetables have been linked successful weight management in addition to reducing one's risk of chronic diseases such as cardiovascular disease, diabetes, hypertension, and cancer. It is imperative to expose our youth to a variety of fruits and vegetables at a

young age to decrease the odds they will have any apprehension toward them as they get older. As research has indicated, the dietary habits adopted in their childhood will likely follow through adulthood (Hakim & Meissen, 2013).

This study will be adopting instruments from previous studies to create a model that will be measuring whether students will consume more fruits and vegetables during lunchtime based on the Social Cognitive Theory (SCT). The SCT puts an emphasis on social influences while highlighting on both external and internal reinforcements, which include personal factors, behavior, and the environment (Bandura, 2004, Knol, L. et al., 2016). This theory takes into account the past experiences of a person, which will be a factor to whether a behavioral action can occur. Past experiences of a person can influence reinforcements, exceptions, and expectancies of which a personal will and why they will engage in a particular behavior (Gaines & Turner, 2009). Where SCT is applied in education, the teacher is merely a facilitator in this learning process. The students are actively engaged, which causes them to take actions in various ways (Kalem & Fer, 2003).

This study will be quasi-experimental, using a cluster sampling method. The experimental group will receive both nutritional lessons on the importance of fruits and vegetables and will be participating in the lunchtime intervention, whereas the control group will only be participating in the lunchtime intervention. This study will allow the researcher to determine whether the nutritional lessons are a significant factor in increasing students' overall consumption of fruits and vegetables. Or if the means of increasing overall consumption of fruits and vegetables is due to the idea of empowerment through exposure, the environment, and active choice to create a

behavior change. Each of these constructs were evaluated in this study. To date, very few studies have looked at SCT as applied in an active learning environment as a means to increase the consumption of fruits and vegetables during lunchtime through an active choice model.

Chapter 2: Review of Literature

While research indicates the health benefits for consuming fruits and vegetables on a daily basis, there still lies questioning on why so many Americans, both young and old, are consuming lower than national recommended amounts (Steffen, 2006). One study from 2006 reported less than ten percent of American children four to eight years of age consumed the recommended daily servings of fruits and vegetables (Kral, Kabay, Roe & Rols, 2009). Humans are predisposed to prefer the taste of sweet to those that are sour or bitter. This may give a reasonable explanation of why children would prefer fruits to vegetables, but it still does not justify why the overall national consumption is so low (Kral, Kabay, Roe & Rols, 2009). Food preferences of children are major determinant of their eating patterns, however, the lack of exposure to fruits and vegetables throughout their childhood years can be one distinguishing factor of why consumption is so low. Other factors may include gender (girls usually consume a higher amount of total fruits and vegetables than boys), socioeconomic status, time restraint, accessibility, and family dietary habits (Baranowski et al., 2013). One can explore reasons why girls tend to eat more fruits and vegetables than boys. Gender influence is sometimes unintentionally exposed to youngsters at an early age. In the United States, commercials tend to show more women eating salads and healthier snacks than men, and the researcher wonders if those same trends are present in

children's books as well. Children tend to mimic what they see, so it is not so outlandish to see statistics that reflect girls tend to eat more fruits and vegetables than boys.

Food selection and intake patterns are established in early childhood and are considered to project into adulthood (Baranowski et al., 2013). This is a prominent public health issue that clearly needs additional investigation and strategies to alter these current findings. Although as a nation (United States), we can pass the blame on big businesses for spending countless dollars on targeting children to entice them with unhealthy, empty calorie food products. The focus needs to be on teaching the youth how to decipher between good quality and healthy foods from products that should only be consumed in moderation. Furthermore, there needs to be a standard program that will assist in developing effective means to ensure an increase of fruits and vegetables without significantly altering one's daily routine (Horne et al., 2004).

One study examined the effects of doubling the portion sizes of fruit and vegetable side dishes in relation to children's intake at a meal. Forty-three children between the ages of five and six years were served dinner once a week for two weeks total. The dinner consisted of pasta with marinara sauce, three fruit and vegetable side dishes and milk. On test days, participants were given the same portion of pasta, but the fruit and vegetable side dishes were doubled. The doubled portion size meals were randomized across the group of children, so they were not given the increased fruit and vegetable meals the same day. The children could eat and drink as much or as little as they wanted. The results showed a significant increase in total weight of fruit and vegetable consumption when the portions were doubled. However, overall increase

(43%) was more fruit intake than vegetable intake. Additional studies could benefit from this type of design, where a wider variety of vegetables and preparation mentions could increase vegetable consumption as much as fruit (Kral, Kabay, Roe & Rolls, 2009).

Traditionally, approaches to increasing fruit and vegetable consumption among children have mainly focused on making behavior changes at the individual level. However, research has disclosed that behavior-based interventions are neither sustainable long-term nor enough to even raise the fruit and vegetable consumption up to recommended standards (Hakim & Meissen, 2013). If limitations are recognized of a study that is completely behavior-based, outside of the box strategies should be used to examine alternative approaches to actively encourage fruit and vegetable consumption both short and long-term. It is not unreasonable to assume that clear, yet simplistic tactics can make it easy for the individual to engage in a behavior change. However, the necessary resources need to be available, and accessible to the individual. With this information, an environment could be created to allow youngsters to increase their overall consumption of fruits and vegetables, which hopefully can be sustainable throughout their lives. A fundamental place to start is within the school cafeteria.

Allowing youngsters to begin making decisions on their own can be worrisome to a parent, teacher, or any caregiver. Even when they are guided to make the decision between right and wrong, knowing consequences, or even recognizing why one choice may be better than another, they may not always make the best choice. In addition, giving children too many choices may be confusing and could diminish healthy eating goals. Many packaged foods are designed for easy accessibility (no preparation),

immediate gratification, and of course, taste. Offering fruits and vegetables as default options instead of having countless choices of a variety of snacks can limit the temptation of less nutrient dense choices while enhancing the effectiveness of this approach (Produce for better health foundation, 2012).

A study published in 2013 considered whether vegetable variety was an effective strategy to increase vegetable consumption among children. In this experimental study, one group was given two vegetable choices while another group was given only one vegetable choice. The group that was given two choices served themselves significantly more vegetables (about 64%) compared to the group that was only given one vegetable option (about 38%) (Bucher, Siegrist & Horst, 2013). Another study included an active choice as their primary means of increasing fruit and vegetable consumption. The study changed how lunch was served to allow the students to be cognitively responsible for the food they were putting on their trays in hopes to increase fruit an vegetable consumption. The study utilized minimal adjustments to the school cafeteria design and setup. Posters were added, menu displays were changed, and food was served and presented in a different way. There were no prices or incentives that were given out to participate in either of these studies. Findings determined that a daily significant average of 15% total increase ($p < .01$) for both fruit and vegetables during the active choice intervention period, which lasted two months in a Midwestern city in the United States. (Hakim & Meissen, 2013).

Several studies have used interactive programs to encourage fruit and vegetable consumption among youngsters. Many of these programs, if implemented correctly, did effectively increase overall consumption of fruits and vegetables. A two-year

experimental study used a program called Cafeteria Power Plus Project to examine whether a cafeteria-based intervention would increase total fruit and vegetable consumption among elementary aged children. The study was based on the SCT and the Theory of Planned Behavior (Perry et al, 2004). The researchers wanted to study the relationships between self-efficacy, indirect learning, and overall behavior. The project offered participants an increased amount of opportunities to try a variety of fruits and vegetables during lunchtime, incorporated healthful eating into the curriculum and provided healthful role models who ate fruits and vegetables, and established social support/encouragement for those participants to eat or who were eating fruits and vegetables. Results showed that the increase in fruit (without fruit juice) was 30% while the total amount of fruit and vegetable consumption increased by 47% based on servings. The data suggests that multicomponent interventions are considerably more successful than a single component (Perry et al., 2004).

A study published in 2012 examined if the use of Color Me Healthy could increase fruit and vegetable consumption among preschool aged children. Color Me Healthy is a program designed for children aged four to five years to encourage healthy eating and physical activity through the senses (sight, smell, taste, hearing, and touch). Seventeen preschool classrooms were randomly assigned to the experimental group (ten) or the control group (seven). This six-week program integrated two circle time lessons and one imaginary trip each week. The lessons ranged from fifteen to thirty minutes. To determine the effectiveness of this program, both groups were given fruit and vegetable snacks one week before the program, one week after the program, and three months after the program was completed. The snacks were weighed before and

after to determine accurate results. The findings determined that the participants who received the Color Me Healthy Program significantly increased their total fruit consumption by nearly 20.8% ($p < .001$) and vegetable consumption approximately by 33.1% ($p < .001$) (Witt & Dunn, 2012).

In Europe, the United Kingdom has one of the lowest overall consumption of fruits and vegetables (Lowe & Horne, 2009). The government's goal is to target children because they are especially reluctant to eat fruits and vegetables. As such, the Food Dudes Program was designed in 1992 by the Food and Activity Research Unit at Bangor University in Whales to increase fruit and vegetable consumption among children ages four to eleven years within a school-based setting. The program's main focus is children, but without reaching their secondary audience, teachers, administration, and parents, the effectiveness of this program would be lessened. The program began by using behavioral psychology as a base. The researchers wanted to develop a better understanding of how children learn, how they respond to rewards, how they imitate role models, and how they develop their taste for foods early in life. The program encourages students to try different fruits and vegetables repeatedly in order for them to develop a liking to the foods. Rewards, although small, are given to the students each time they try a fruit or vegetable (Lowe & Horne, 2009).

During the first phase, which lasts sixteen days, students are either read a story and/or able to watch a specially designed episode staring the "Food Dudes". The "Food Dudes" characters provide influential role models to emulate. After the video and/or story, the students are given fruits and vegetables to try. If they eat both the fruit and vegetables they are given a small reward. The repeated measure encourages students to

taste the foods in hopes they become more familiar and, in turn, like the foods (Lowe & Horne, 2009).

The second phase is ongoing, with less physical encouragement to eat fruits and vegetables than the initial phase. During this phase, each classroom has a wall chart that tracks the students' records of how many fruits and vegetables they are consuming. The more the chart fills up the more rewards and Food Dude certificates they will receive (Lowe & Horne, 2009). The results from this program are impressive.

The aforementioned model was adopted for an intervention (Food Dudes) school and a control (non-Food Dudes) school. The study revealed that the unhealthiest eaters in the Food Dudes school went from eating 4% of the fruits they were given before the intervention began eating significantly more (68%, $p < .001$) post intervention. There was a follow up four months later and the students were still consuming twelve times the fruit and four times the amount of vegetables originally eaten (Hone et al., 2004).

The Food Dudes program was first implemented in the United States by Utah State University in 2011 in an in vitro study. Researchers saw a significant increase of about 40% of fruit consumption and 55% vegetable consumptions among elementary school children. Many of these students did not consume fruits and vegetables on a regular basis. From these results, the researchers are expanding the program to six elementary schools in Northern Utah (Jones, 2014). At this time, additional results have not been published at this time regarding the expansion of this program.

Many teachers and parents also evaluated the Food Dudes Program after interventions were complete. Approximately 92% of teacher stated that parents included at least one or more portions of fruit in their children's lunchboxes.

Additionally, 77% of parents included added at least one or more portions of vegetables in their children's lunches (Lowe & Horne, 2009). Children's classroom behavior had improved since the start of the Food Dudes Program as reported by 31% of teachers. Parents disclosed a significant increase in the consumption of their children eating fruits and vegetables during lunch. Additionally, 85% of parents disclosed that their children would ask them to purchase more fruits and vegetables to consume at home as a result of the Food Dudes Program (Lowe & Horne, 2009). Through the success of this program, Food Dudes is being implemented in countries such as England and Ireland, and states such as Sicily and California.

There was one study, however, that did not have as much success in Europe as many other countries did. Fifteen schools in West Midlands, England prepared similar a similar study using the Food Dudes Program. However, this study looked more into evaluating the increase in fruit and vegetable consumption of all lunches (school purchased and lunches brought from home) where most of the other studies were based on lunches purchased in school. Even though the results showed a noteworthy increase in the overall consumption of fruit and vegetables after three months in the Food Dude schools, the increase were only for those students who bought lunch from school. Additionally, the results were not consistent at the twelve-month follow up (Upton, Upton, & Taylor, 2012).

Both self-efficacy and proxy efficacy have been studied to support an overall increase in fruit and vegetable consumption among school-aged children. Self-efficacy can be defined as a person's belief (confidence) that he/she can accomplish a behavior in order to attain specific goals. Where as proxy efficacy is how confident a person is in

their ability to make others act in the same behavior as the individual to reach a desired outcome. Using the SCT and previous literature on fruit and vegetables as guides, a study published in 2010 examined self-efficacy for fruit and vegetable consumption (separately), proxy efficacy from parents, and proxy efficacy from after school staff. The researchers were also trying to determine if there would be changes based on a child's gender, socioeconomic status, and ethnicity. Results determined that self-efficacy of fruit and vegetable consumption, although related, should be treated as two separate behaviors because their means for change require different influences. Secondly, the researchers also indicated that the findings remained unchanged based on the demographics above, which indicates the information could be generalized (Geller & Dzewaltowski, 2010). Although self-efficacy and proxy efficacy are important in research, it is significant to remember that they are multidimensional components and should not always be grouped together when conducting research on specific topics such as fruits and vegetables.

A study was done in 2012 to improve healthy dietary behaviors, nutrition knowledge and self-efficacy in underprivileged school children in conjunction with parental and community involvement. The Kids Health Research Study was implemented to assess the effects on a family-focused coordinated school health program through weight status, child behaviors, and dietary and sedentary behaviors. The study was a parallel-group, randomized control trial that used repeated measures. Baseline data was collected at the start of the study and repeated follow-ups were at four and twelve months. After a year follow-up, the children that were in the intervention group increased their dietary intake of fruits and vegetables, had a

decreased BMI, and an increase was seen in self-efficacy for healthy food choices (Wright, Norris, Giger & Suro, 2012).

One may argue that the idea of implementing incentives within a study to increase fruit and vegetable consumption could contribute to inaccurate results. Meaning, the students may be more geared to obtaining the reward or prize rather than consuming more fruits and vegetables, which means the results will not be sustainable. Is the validity of these studies truly successful when prizes or some type of compensation are being used to increase fruit and vegetable consumption? A primary concern with using rewards as a part of a program or study is that the participants would consume less fruits and vegetables once rewards were discontinued. However, since research have stated that if children are exposed to certain foods repeatedly they can acquire food preferences. In that case, the use of short-term rewards may actually be beneficially in assisting children to acquire a preference and exposing them to a variety of fruits and vegetables. In turn, could produce a positive effect on their overall consumption of fruits and vegetables (Produce for better health foundation, 2012). Many studies do suggest that the use of rewards or incentives can not only increase initial participation, while in turn, allow repeated measures of taste and exposure to different fruits and vegetables to increase overall consumption well after the intervention was complete (Horne et al., 2004).

Additionally, small rewards in conjunction with a set of peer modeling videos to reinforce the message of the importance of consuming fruits and vegetables through the implantation of the Food Dudes Program. Students would receive a small reward each time they tried a fruit and/or vegetable. The students are exposed to the fruits and

vegetables repeatedly to make them more familiar with the type, taste, and texture of the produce in hopes that it will increase palatability and eat more of them. In addition to the successful results of this program, many teachers and parents revealed the increased amount of fruits and vegetables they were seeing them eat at lunch and ask for at home after the program was complete (Lowe & Horne, 2009).

During the study of the Cafeteria Power Plus Program, students were both encouraged (given verbal cues and praise when fruits and vegetables were chosen and eaten during lunch) and rewarded for choosing fruits and vegetables at lunchtime during the "challenge weeks". Although after the conclusion of this two-year study was complete, the fruit consumption was much higher than the vegetable consumption, the data still revealed that the overall consumption of fruits and vegetables was much higher than the baseline because of this program (Perry et al., 2004).

A three-week intervention program compared four conditions to increasing total consumption of fruits and vegetables. These four conditions included: exposure plus tangible non-food rewards, exposure plus intangible (praise) reward, exposure alone and no treatment at all. This cluster, randomized sample was completed in sixteen classes in eight different schools with participants ranging from four to six years of age, where they were exposed to twelve taste exposures daily. There was a one and three month follow up post intervention to test the validity of the study. The results showed that all three-exposure groups increased consumption compared to the control group. The data was consistent at the one-month follow up and the three-month follow up, however, the exposure group alone became non-significant after 3 months (Cooke et al., 2011). From this study, both tangible and intangible rewards do not necessarily cause negative

effects and may actually prove to be useful tools when promoting healthy eating and proper food choices.

Another successful program implemented in 2011, used incentives where students were paid to eat fruit and vegetables during lunch. However, students who are buying lunch or are given lunch through the National School Lunch program discarded approximately 70% of the fruits and vegetables on their tray. Whether a child eats the fruits and vegetables that are given to them on their lunch trays, the 2010 Healthy and Hunger-free Kids Acts requires all students that participate in the subsidized lunch program to take a serving of each. This plate waste is costing the government a sizable deficit, approximately $5.4 million a day. During this study, the number of students eating fruits and vegetables increased by 80% and reduced the amount of waste by 33%. Although once the incentives were not issued, the overall consumption was not as high, but it did not completely drop down to the baseline level either (Price & Just, 2013). If executed properly, the use of both tangible and intangible rewards can be appropriate ways to increase overall consumption of fruits and vegetables both in school and at home to young children. _By the research team paying the students to eat the fruits and vegetables that are given to them (rewards may range from a nickel, to a quarter, or a ticket for a bigger prize) possible could reduce the deficit $1.1 million a day deficit. Through successful implementation, these repeated measures can soon turn into habitual norms that will likely lead into their adolescent and adulthood years.

Previous studies have shows that fruits and vegetables (up to 42%) are the most wasted items of a school lunch (Hakim & Meissen, 2013). School cafeterias may want to look into not only the type of fruits and vegetables being offered, but also the way in

which these items are being displayed. Similarly to supermarkets, the design, and setup are key factors in which consumers will make decisions to purchase items rather than ignoring them. Minor changes such as display case, color usage, or poster circulated throughout the cafeteria could encourage more students to choose and consume a higher percentage of fruits and vegetables that are being provided to them.

Despite countless studies and implementing programs from research teams and government organizations to increase the nation's overall fruit and vegetable consumption for our youth we still fall below the recommended standards. Research designs of many studies have proven to be effective, yet most children, teens, and adults are still lacking sufficient nutrients provided by fruits and vegetables and are practicing unhealthy lifestyles. Why aren't these programs being implemented throughout school systems nationwide? Could it be that school districts still think it may be too difficult to implement something new or that it will cost too much money?

Many recent research studies provide overwhelming evidence that students will learn best when they are actively engaged, participate and are a main part of the learning process. This process is referred to as the Active Learning Model (Florida State University, 2011). Whether it is through project based learning or other means of getting the students actively involved in course material, they will be more likely to retain and understand the concepts being taught (Florida State University, 2011). Unfortunately, this is still quite the opposite of the way traditional learning is being implemented in schools and universities across the country. A renowned philosopher, Confucius gave profound statements throughout his life that are still discussed in today's education. One in particular addressed how when one hears they forget, when

one sees they remember, and when one does they understand. This philosophy is unpretentious, yet applicable statements of why the SCT and active learning are so effective.

The SCT puts an emphasis on personal factors, behavior, and the environment while highlighting on both external and internal reinforcements in hopes to create a behavior change. This theory takes into account the past experiences of a person, which will be a factor to whether a behavioral action can occur. Past experiences of a person can influence reinforcements, exceptions, and expectancies of which a personal will and why they will engage in a particular behavior (Gaines & Turner, 2009). The National Cancer Institute created an initiative in 1993 to increase fruit and vegetable consumption nationwide. Via a multi-component intervention, based on the SCT, targeted fourth grade students in 28 random elementary schools based on ethnic composition and proportion of students receiving free or reduced lunch. Students were divided into either an immediate intervention condition or a delayed intervention control condition. Specific components of the Social Cognitive Theory were used during this study such as outcome expectancies, perceived self-efficacy, social norms, behavioral skills, reinforcement, and availability of fruits and vegetables. Results showed that overall consumption was higher for the immediate intervention children compared to the control group (Reynolds et al., 2000).

The SCT proposes that combining the triad of behavior, personal factors, as well as environmental factors can assist in a behavior change or changes to occur (Reynolds, Hinton, Shewchuk, & Hickey, 1999). The constructs of the SCT are excellent markers to ensure the effectiveness of a behavior change. There are six constructs of the SCT

and they include reciprocal determinism, behavioral capability, observational learning, reinforcements, expectations, and self-efficacy. Reciprocal determinism is the main focus of the SCT, where it is relating to the shared interaction of an individual, their environment, and their behavior in order to create a positive change. Behavioral capacity is referencing one's ability to perform a specific behavior through knowledge. Observational learning, or modeling, allows the individual to witness others acting in the behavior, and then having that individual reproduce the same action(s). Reinforcing stimulus following an individual's behavior may increase the likelihood of a future behavior. Reinforcement refers to both external and internal. The more positive reinforcements an individual receives will increase the likelihood of the individual continuing that behavior. Expectations are the anticipated outcomes of an individual's behavior. Many times expectations will be driven from pervious experiences, however, they can also focus on the value one places on the outcome of the behavior. Finally, self-efficacy discusses the amount of confidence an individual's has on his/her ability to successfully perform the behavior (Bandura, 2004; Knol, L., et al., 2016).

Another study published by the Society for Nutrition Education that used the SCT and additional literature on nutrition education to explain the consumption of fruit and vegetables among elementary students. Information was collected from 414 third grade students that used the SCT as a means to test availability of fruits and vegetables, nutrition education, modeling, knowledge and self-efficacy. The researchers randomly split the students into two groups, and then split the entire group by gender (184 males and 217 females). Information collected from each student included a seven day, 24-hour recall was collected from each student, a child psychosocial questionnaire which

tested knowledge, perceived self-efficacy and expected outcomes and a children's food preference questionnaire. Availability of fruits and vegetables were measured through a parent psychosocial questionnaire. Although the end results showed all five predictors showed correlation with increase consumption, availability and self-efficacy were the most consistent with all three groups that were tested (Reynolds, Hinton, Shewchuk, & Hickey, 1999).

A study published in 1997 used the elements of the SCT as a means to increase fruit and vegetable intake in children. A program funded by the National Cancer Institute designed an assessment called "Gimme 5". This assessment was designed to determine baseline data in order to increase fruit and vegetable consumption among elementary-aged school children. Data was collected for two months among 3rd grade students. The average age was 8 years, the gender ratio was equal (50%), and the ethnic background was 86% Caucasian and 14% African American. The approach for this study was noteworthy because the researchers were assessing the individual constructs (reciprocal determinism, behavior capability, expectations, self-efficacy, modeling, and reinforcements) of the SCT as associated with the consumption of fruits and vegetables, rather than integrating them as a whole. Multiple measures were utilized to assess each construct in relation to fruit and vegetable consumption. There were 1,398 participants involved in the study. The results disclosed the biggest relationship between the consumption of fruits and vegetables were exposure to fruits and vegetables, fruit and vegetable selection available, and asking behavior (preference). The association between preference and fruit and vegetable intake was significant ($p < .01$). Results also showed that knowledge and negative expected outcomes were not related with fruit

and vegetable intake. Repeated measures were used to provide accurate analysis for this study. The researchers also examined the difference in consumption of fruits and vegetables between weekdays versus weekends. As the researchers hypothesized, the consumption of fruits and vegetables was significantly higher on the weekdays than the weekends ($p < .01$). Lastly, results showed that there was a stronger influence on fruit and vegetable intake at lunch and dinner than during breakfast or snack time (Resnicow et al., 1997).

As discussed earlier in this chapter, programs including 5-a-Day Power Plus, 5-a-Day Cafeteria Power Plus, and Gimme 5 examined the effectiveness of intervention programs. Additional programs that promote fruit and vegetable consumption include Squire's Quest!, Every Day-Lots of Ways, Cookshop and High 5 project were among the others that offered fun, challenging, yet effective means to increase fruit and vegetable intake. Squire's Quest! is a computer-based interactive game designed to create educational sessions as well as opportunities to apply what the students have learned. "Students exercised problem-solving and decision-making skills, evaluated asking skills, set personal goals, and practiced self-regulation and self-reward while completing Squire's Quest! adventures" (Gaines & Turner, 2009, pp. 56). After the intervention was complete, students consumed approximately one more serving of fruits and vegetables than the students who were not using this program (Gains and Turner, 2009).

Every Day-Lots of Ways was designed to increase the students' knowledge of fruits and vegetables and to increase vegetable intake during lunchtime. The program was aimed for African American students in kindergarten and 1st grade that were in an

underserving urban school. This multicomponent nutrition education program allowed the students to receive ten lessons in addition to receiving incentives, preparation activities, and food samples. Newsletters were sent home to the parents that unified the lessons taught. Results showed that although their knowledge increased significantly, they were not able to increase their vegetable intake (Gains and Turner, 2009).

The Cookshop program was created to elevate the intake of vegetables and whole-grains in low income, urban areas focusing on students in Kindergarten through 6th grade. The research team along with parents and teachers would take part in these interactive cooking workshops with the participants. The hands on activities were meant to enhance learning while encouraging self-efficacy. The use of local produce was incorporated into this program as well as newsletters and articles that were sent out to the community. The effectiveness of this program had more of an impact on the older students compared to the younger ones (Gains and Turner, 2009).

Lastly, the High 5 project allowed participants to taste, problem-solve, model, reinforce, and self-monitor their performance in order to increase fruit and vegetable consumption. The goal was to challenge the participants (4th graders) to eat five servings of fruit and vegetables each day and monitor their progress through a dietary intake log. Parents were also involved with this study where they would be included in an informational session, demonstrate encouraging behaviors at home, and would sign off that their child completed their goal in order for the child to receive some sort of tangible reward. The participants significantly increased their fruit and vegetable consumption after the first year by 1.6 servings. Within one year, servings per day

increased from 2.6 servings to 3.96 and 3.2 servings in the second year (Gains and Turner, 2009).

Active learning allows the teacher to prepare lessons with what they want the students to do with the material from the course rather than focusing on what you should deliver to them. However, if the students are not "on board" with this active learning concept, the results may not be favorable. With that said, there has been evidence that has showed students are more likely to not only engage in active learning lessons, but excel and apply the concepts being learned throughout their lives. In 2003, a study was done to assess whether there was an effect on the Active Learning Model with students' learning, teaching, and communication. Thirty-four secondary education teachers from mathematics, chemistry, and physics who were enrolled in an instructional planning and communication course as part of the master's program at Yildiz Technical University in Turkey were asked to participate in this study. The study took place during the fall semester of 2001, where the professor took an active learning approach to the course. To determine whether the objectives were successful, the participants were given surveys, interviewed, and observed sporadically during the semester. The results from this study determined that the active learning process was more engaging and different than the traditional approaches to teaching. This method of teaching facilitated how the students understood the material and assisted them in developing skills that were both productive and creative (Kalem & Fer, 2003).

Although the study above was not performed on the increase consumption of fruit and vegetables, the validity of the theories makes it more valuable for the current study being performed. To date, few studies have looked at the SCT in conjunction

with active learning as a means to increase the consumption of fruits and vegetables during lunchtime. The concepts of both the SCT and active learning will best facilitate the design of the current study in hopes to not only increase fruit and vegetable consumption during lunchtime, but to give them empowerment and the insight to increase consumption even after the study has ended.

Through analyzing many of the programs discussed within this review of literature, many of them lacked specific components to make them sustainable. Capital funding in addition to lack of interest with constantly trying to formulate ideas to keep the goal at hand fresh are likely reasons for some of the studies lack of long-term sustainability. The present study incorporates fragments each of these studies to make it easy to implement, cost effective, fun, and of course, increase the consumption of fruit and vegetables during lunchtime? This current study will be adopting resources from previous literature to create a model that will be measuring whether students will consume more fruits and vegetables during lunchtime based on the social cognitive theory, which will focus on repeated exposure, peer-to-peer encouragement, and self-empowerment. This study tests if students who have additional information about the importance of fruits and vegetables, will one group consume more than the group that will not receive any nutrition information at all?

Intervention Goals

The purpose of this intervention is to increase fruit and vegetable consumption for second grade students during lunchtime. Exposing the students to a wide variety of fresh fruits and vegetables allowed them to expand their palates while reducing the chances that they may be fearful of trying to new fruits and/or vegetables as they grow

older. The researcher hoped that exposing the participants to a variety of fruits and vegetables at a young age would teach them the importance of consuming fruits and vegetables on a daily basis. In turn, optimistically, these healthy eating habits would continue with them through their pre-adolescence, adolescence, and adulthood.

Allowing the students to choose between different options could give them a sense of independence. Instead of eating whatever their parent's pack for them, they were the ones who were in control of the decision-making, which is promoting self-efficacy (SCT) and empowerment (SCT and active learning). Lastly, another important goal of this study was to determine whether incorporating knowledge (nutrition lessons) would increase the overall consumption of fruits and vegetables compared to the students who are not receiving those lessons. The researcher anticipated the experimental group would increase their overall consumption of fruits and vegetables compared to the control group.

Increasing participation in the behavior change is one of researcher's goals. To do this, the researcher hypothesized if the students where able to choose between multiple options it would give the them a sense of freedom and interest in participating in the behavior. The idea of offering more than one option would, theoretically, encourage them to choose something over nothing, which, in fact, combines both factors (Prince, 2004).

The goal was to use the reinforcements as an advantage in order to increase the probability that the participants in each group would continue to engage in the behavior during each intervention day. However, the researcher anticipated that the constructs of behavioral capability and reinforcements would inspire the participants in the

experimental group to choose fruits and vegetables more often than those in the control group because of their increased knowledge and motivation to enact in the behavior.

Chapter 3: Methodology

Introduction

The current study is based on the SCT (Bandura, 2004; Knol, L. et al., 2016) and active learning (Prince, 2004) to determine whether additional nutrition lessons will have a greater increase on overall fruit and vegetable consumption during lunchtime compared to those students who did not receive the additional lessons. SCT emphasizes the interaction between people, their behavior, as well as their environment (Denler, Walters & Benzon, 2014). Fragments of the previous literature, which will be noted in the next chapter, were used when creating the foundation of the current study.

A variety of constructs were used throughout the lessons and the fruit and vegetable intervention days were primarily based on reciprocal determinism. The triad stimuli of personal factors, behavior, and the environment were utilized to increase the likelihood of a behavior change. The remaining constructs of behavioral capability, observational learning and positive reinforcements (from both adults and peers), expectations, and finally, self-efficacy were used continuously during the research study as explained below (Denler, Walters & Benzon, 2014)

The researcher anticipated the experimental group would increase their overall consumption of fruits and vegetables compared to the control group. This was due to the four additional nutrition lessons that the experimental group received where the control group did not receive any lessons on nutrition. The researcher set a p-value of $<.05$ to test the significance between both increase in overall consumption for both the

control and experimental groups in addition to the experimental group consuming generally more than the control group due to the nutritional lessons being taught.

Setting

The study took place in a suburban town located in Northern New Jersey. The town has more blue-collar workers (69%) compared to white-collar workers (31%), with an average household income of $82,750 (New Jersey Multiple Listing Services, 2015). For a relatively small town, the public school system currently has six running schools. These schools consist of a Kindergarten Center, two elementary schools two middle schools and a high school. The elementary schools run from first through third grade, where the middle schools run from forth through eighth grade. Students attend a particular school based on their street location. The Board of Education has made determinants on which side of town will attend which elementary and middle schools, however, if one school is more populated than another for a particular school year, students may be asked to attend the school that has more space.

The Superintendent of Schools, the elementary school's principal, and the Institutional Review Board of Montclair State University granted approval for this study. There are four 2nd grade teachers in the elementary school. Teacher 1 has been teaching second grade for three years, but has been teaching for a total of eleven years. Teacher 2 has been teaching second grade for three years, but taught basic skills her first year in education. Teacher 3 has been teaching second grade for four years, but has taught for twenty years. Finally, Teacher 4 has been teaching second grade for twenty-two years, but has been a teacher for thirty-five years. The school nurse and has been a registered nurse for 42 years, 16 of which have been a school nurse. The school nurse

was a crucial assistant during this study. During intervention days, she aided the researcher when facilitating fruits and vegetables to the students. She was also able to assist in the arrangement and cleanup processes.

Participants

This study targeted the 2nd grade classes. Second grade was chosen for this study based on the district's health curriculum, where students begin to learn about healthy eating. There were a total of 92 students divided into four separate classes, with a total of 51 girls and 41 boys. Their ethnic backgrounds included 49 Caucasian/White, 16 Asian, 11 Hispanic/Latino, 13 Interracial, 2 African American/Black, and 1 Alaskan/Native American. No students in this grade qualified for free or reduced lunch (at the time of the research), and only 4% of the population was classified as ESL (English as a second language), SLD (specific learning disability), or LEP (limited English proficiency).

Two classes were divided into the experimental group and the remaining two classes were comprised of the control group. The experimental group was determined by the teachers' willingness to have more involvement in the study. Both Teacher 1 and Teacher 2 volunteered their classrooms to be the experimental group. Their classes received four nutrition lessons based on the constructs of the SCT and the importance of eating fruits and vegetables. They were also part of the fruit and vegetable intervention where the students will have a choice on what, if any, fruits and vegetables they would like for the day. The control group did not have any educational lessons, however, they were still be able to participate in the fruit and vegetable intervention.

Parental consent and child assent forms were distributed on January 8, 2016. There were two separate forms for each group to make it clear to both the parents and the participants the exact procedure to the study. (The Montclair State University's Institutional Review Board, protocol number 001779, approved human subject researchers on December 23, 2015). The students were excited about being a part of the study when the researcher introduced herself to each class (informal observation). Forms were collected until January 19, 2016, when a final headcount was determined. Forty-six of 47 (98%) of the experimental group participated in the study compared to 43 of 45 students (95%) participated in the control group. Parents were instructed to disclose any fruit or vegetable allergies their child may have and the researcher was able to cross-reference those results with the school nurse. There were very few students that had allergies to fruits or vegetables, and those particular pieces of produce will be avoided during the lessons and intervention.

On January 21 and 22, 2016, the researcher administered the pre-assessment survey to those students who were participating. The researcher explained the instructions to the participants. The classroom teacher reinforced the instructions to ensure the students understood what they were supposed to do. The students were asked ten questions about fruits and vegetables and two basic demographic questions on survey created on GoogleForms. (Appendix B). GoogleForms was used because all of the information generates into a spreadsheet for easy analysis. Many of the participants were tech savvy for their age. They only asked questions regarding how to pronounce some of the fruits or vegetables, or they wanted a better fruit or vegetable descriptions. Some of the students were not sure what to put for the option of "other", but once

explained what that category meant they were able to answer the question according to their personal preference.

Study Design

This study was broken up into two groups: experimental and control groups. Since there were four, 2nd grade classes at the elementary school, two were placed in the experimental group and two were placed in the control group. Teacher volunteers determined the groups. This study lasted a total of nine weeks with three weeks off. The table below (Table 1: Intervention Dates) indicates the intervention dates for each session in addition to the three-week break period.

Table 1: Intervention Dates

Session 1	**Intervention Dates**
Week 1	2/1/16 & 2/5/16
Week 2	2/8/16
Week 3	2/19/16
Week 4	2/22/16 & 2/26/16
Week 5	2/29/16
Week 6	3/7/16---OFF
Week 7	3/14/16---OFF
Week 8	3/21/16---OFF
Session 2	
Week 9	3/28/16 & 4/1/16

The experimental group received four nutrition lessons on the importance of fruits and vegetables in relation to the body. Each lesson ran approximately 30 minutes. The lessons were created to follow some or all of the constructs based on the Social Cognitive Theory (SCT). Reciprocal determinism, behavioral capability, expectations, self-efficacy, observational learning (modeling), and reinforcements were used during different lessons to increase behavior change. How and when these constructs were applied will be clarified within the lesson plans below. These lessons began the week

of January 25, 2016 and concluded during the week of February 22, 2016. The week of February 8th was skipped due to the district's winter break.

Cafeteria Intervention

As defined in a previous section, the SCT and parts of the active learning were used in both the intervention and nutrition lesson sections of this study. Reciprocal determinism was utilized as the main component of SCT. The shared interaction of an individual, their environment, and their behavior in order to create a positive change, again, were applied through SCT (Gaines & Turner, 2009). Other constructs that were used during this study were behavioral capacity, observational learning, reinforcements, expectations and self-efficacy. Each of these constructs will be defined and an explanation of their application will be provided within the lesson plans section.

Allowing the participants to choose between different options can offer them a sense of empowerment. This is where the active learning is effectively introduced. A specific construct of the SCT, self-efficacy, allowed the participants to make their own choices based on the information they receive. The literature has demonstrated that using self-efficacy along with principles of active choice, participants are given a sense of encouragement, pride and independence when they are able to make their own choices. This, in turn, prospectively inspired the participants to continue the behavior change if given the option (Prince, 2004).

The fruit and vegetable cafeteria intervention began on February 1, 2016 and ended on April 1, 2016, which lasted a total of nine weeks. Depending on the district's calendar, one to two times per week (Monday and Fridays) for five weeks for the first session and two weeks for the second session. There was a three-week break period

during each intervention session to measure growth. Both the experimental and control groups were given two colored tickets before lunchtime. (The classroom teachers distributed the tickets to the students prior to going down to the cafeteria). One colored ticket (red) represented fruits while the other colored ticket (green) represented vegetables. The experimental and control groups had a slightly different shade of the colored tickets to easily decode each group. By theoretically creating a system that would make the intervention a little more exciting in addition to keeping track of each student who was participating each intervention day, the researcher chose to use colored tickets.

Students had 22 minutes to eat their lunch, then recess for the remaining 23 minutes. Once the students settled themselves at their lunch table, they were able to go up to the fruit and vegetable table that was decorated with different laminated pictures of fruit and vegetable art. The table had a colorful menu displayed for the participants to see. They had a choice between two different fruits and two different vegetables. (A sample menu can be found in Appendix C). The decision to provide more than one option was based on several factors. One factor was to increase self-efficacy, while the other factor involved a more conscious based decision for the participants.

If a participant submitted a ticket or tickets, self-efficacy was continued through partaking in the intended behavior. The participants were able to ask questions about the fruit or vegetable if they were unsure what they were. Using the knowledge from the information just given to them, in addition to the information taught to the experimental group during their lessons, the participants in both groups were able to use the tickets to make their own choice (conscious based decision). It should be noted that

although behavioral capability is not essential for the behavior change to occur, knowledge has been linked to increase the probability that a person will in fact engage in the intended behavior (Reynolds, Hinton, Shewchuk, & Hickey, 1999). The students gave a ticket to the school nurse, a lunch aide, or the researcher if they wanted a fruit and/or vegetable. Those tickets went into a special bag labeled "used." If they only wanted one or none at all, their tickets went into a special "unused" bag to easily cross-reference the data from the remaining fruits and vegetables at the end of each session.

The participants were not coerced to take the fruits and vegetables. However, they usually received some sort of praise from the lunch aides, the principal, the school nurse or the researcher when they were eating something they chose as a means to promote a sense of positive reinforcement. As mentioned in previous studies, the use of reinforcement and rewards are not always viewed as a partiality or an aim to skew to the findings (Horne et al., 2004). With that said, tangible rewards were not given during the time of the intervention, however, positive reinforcements were viewed as an unbiased affect. This intended admiration from authority figures prospectively assured the participants that they were doing something good and while receiving approval from adults. Still, it was of their own free will to select what they wanted, if they wanted anything at all.

The fruits and vegetables were not served with any type of dip. All of the produce was served raw, except for one vegetable choice, butternut squash, which was served roasted. The selection of fruit and vegetables was determined by accessibility, season of produce, and price for that particular week. The researcher washed, cut, and weighed the produce for each session, and placed the produce in clear snack bags for

the participants to see. They were displayed in large trays to make them more attractive to the participants. When the students were done and were about to part for recess, they were instructed to leave their bags in a special basket on the table to determine plate waste. (Both the researcher and all of the classroom teachers explained this process to them before the intervention began).

After five weeks, the participants took a three-week break, and began the fruit and vegetable intervention on March 28, 2016 and ended April 1, 2016. During the week of April 4, 2016, the researcher administered the post-assessment survey to determine if there were any significant changes in the overall consumption of fruits and vegetables, in addition comparing the consumption between both groups.

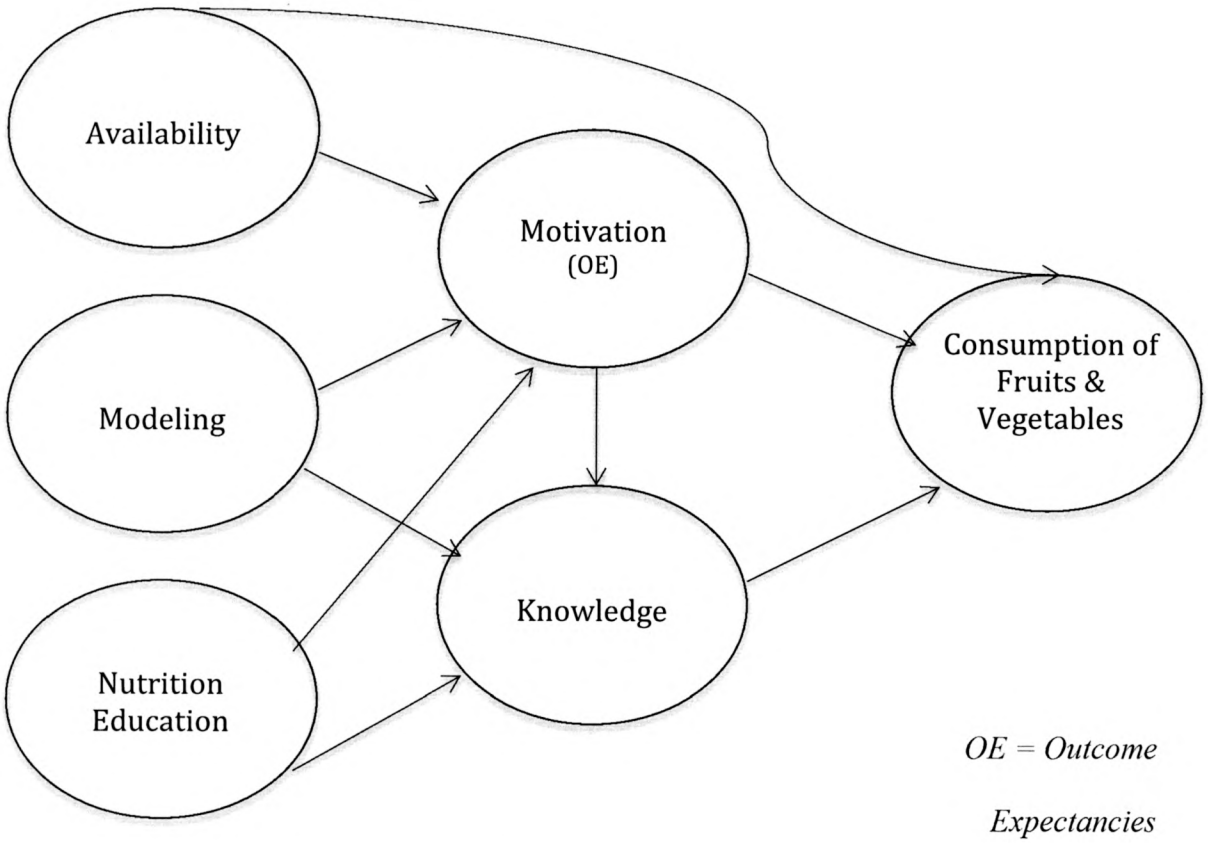
Educational Lessons

As previously stated, SCT suggests with the use of reciprocal determinism, when a behavior, the environment, and personal factors are working in congruency, a behavior change is more likely to occur. Behavioral capacity reinforces one's ability to perform a specific behavior through knowledge. Observational learning, or modeling, allows the individual to witness others acting in the behavior, and then having that individual reproduce the same action(s). Reinforcement refers to how an individual will respond to both external (environment) and internal (self-initiated) responses received through outside sources in order to determine the likelihood of one continuing to engage in a behavior. Expectations are the anticipated outcomes of an individual's behavior. Expectations are usually driven from pervious experiences, however, they can also focus on the value one places on the outcome of the behavior. Finally, self-efficacy

examines the amount of confidence an individual's has on his/her ability to successfully perform the behavior (Bandura, 2004; Knol, L., et al., 2016).

An adapted tool first developed by Reynolds, Hinton, Sshewchuk, & Kickey for a study on *Social Cognitive Model of Fruit and Vegetable Consumption in Elementary School Children*, which was published by the Society for Nutrition Education, was employed. The constructs used in the present study were used to update this model, which is displayed in *Figure 1* (Reynolds, Hinton, Sshewchuk, & Kickey, 1999).

Figure 1: Fruit and Vegetable Consumption Map



The design of *Figure 1* highlights the present methodological approach to combine the SCT with active learning in order to predict how the participants would

consume fruits and vegetables based on the two groups. This model allowed the participants to utilize multiple pathways to engage in the intended behavior change. One pathway was designed specifically for the experimental group while another was devised for the control group. Availability and modeling could be used for both groups. The experimental students would receive nutritional education and knowledge through the four lessons taught throughout the intervention in hopes to have the participants engage in the behavior change. However, the participants in the control group would only be able to use their current knowledge when choosing a fruit and/or vegetable on intervention days. Each group had fruits and vegetables available to them during lunchtime, so accessibility was present to each participant. During intervention days, each participant could motivate one another to choose a fruit and/or vegetable while also using adult figures in the cafeteria as positive role models. Peer-to-peer modeling in addition to adult-to-peer modeling could be present in order to encourage a participant to engage in the behavior change. Modeling can play a strong influence on whether a person will or will not to choose to partake in the behavior at hand. Nonetheless, any pathway that a participant would choose, allowed them to reach the targeted behavior change of consuming fruits and vegetables.

Nutritional Lessons

As previously noted, the students in the experimental group received four nutritional lessons, which increased their overall knowledge and motivation to engage in the behavior (consuming fruits and vegetables during lunchtime). Both peer modeling and encouragement (modeling) from the adults were used to assist in raising the participants' self-confidence to partake in the behavior change. Because the

experimental groups were in two different classrooms, the researcher had to split the lessons to be taught on two separate days. The schedules were worked out between the second grade teachers' schedules in addition to the researcher's teaching schedule. Each lesson was approximately 30 minutes. Again, these lessons were used as a factor to determine if the participants in the experimental group would consume more fruits and vegetables overall compared to the control group, who did not receive any nutrition lessons.

Lesson one: Mystery Bag

- Step 1: Instruct the students to sit on the floor where they will be facing a projector screen such as a SmartBoard to watch a video. The video includes important information that reinforce why fruits and vegetables are important for your body. Behavioral capability was used within the video to support some basic nutrition information while providing the students with additional information about the importance of fruits and vegetables. In turn, the messages the participants' will receive potentially encourages them during situations when they would have to make the decision to engage in the behavior.
- Step 2: Show the video (Wronko, 2015). After completion of the video (about 5 minutes), bring the students' attention to where eight brown paper sandwich bags are lined up (lettered A through H). Each brown paper bag will have an index card with several clues of what fruit or vegetable was in the bag. The fruits and vegetables that were in the bags included kiwifruit, apple, starfruit, grape, tomato, carrot, pepper, and

cucumber, but any fruit and vegetable can be used. Explain to the students that will be called up three at a time to read the clues to the class, and have a chance to feel (without looking inside) the fruit or vegetable to determine if they could guess the correct response. Instructions should be clearly described to the students to ensure they understood the activity at hand.

- Step 3: Call up students. The participants will be able to guess all of the fruits and vegetables from each of the bags using the clues and feeling the fruit or vegetable. To include more of group participation, invite the class to guess altogether which fruit or vegetable is in the mystery bag.
- Step 4: After the game, unveil a tray of precut fruits and vegetables that were used in the bags for the students to try.
- Step 5: Ask students to clean their hands. Call them up by group to try the fruits and vegetables.
- Step 6: Ask the participants what they liked about the different fruits and vegetables, and give them encouragement and positive praise for tasting the produce. Allow the students to have second helpings once every student received a turn. Do not serve the fruits and vegetables with a dip or dressings.

Lesson two: Food Manners

The second lesson based on encouraging students to recognize the difference between foods that are good for health and foods that are not as healthy. The researcher also wanted to have the students recognize that each person has different taste buds that

allow one person to like something where another person may not like that same food. New information learned during this lesson was not solely based on nutrition information about fruits and vegetables, however, the lesson was to allow the students to become more self-confident about what fruits and vegetables they enjoy regardless of what their peers may like or dislike. This component applied reciprocal determinism by creating an environment that is positive for students to feel comfortable and self-assured that what they enjoy will be accepted from their peers. This, in theory, would allow them to continue to engage in a positive behavior change.

- Step 1: Instruct the students to watch a short video on food manners, which included a dramatization of why we should not make fun of others for liking different foods. At the end of the video the two girls will try each other's foods and were able to enjoy new foods together. Through the information given within the video, the construct of behavioral capacity was used to deliver the knowledge they needed to complete the following activity.
- Step 2: Show the video (Wronko, 2015).
- Step 3: After the conclusion of the video, prompt the students to go back to their seats where they will find a worksheet. This worksheet includes a chart that asks them to identify foods and beverages that they think are healthy and food and beverages that are unhealthy. Give the students about ten minutes to complete the chart.
- Step 4: After the class completes the worksheet, take about five minutes to go over their responses. Have the students' volunteer responses and

give encouragement. This will demonstrate both modeling and reinforcements.

- Step 5: The second part of the worksheet requires them to create two sentences. The first sentence asks them to describe why fruits and vegetables are important for the body, and the second sentence asks them to explain why we should not make fun of others for liking foods that may be different from what we like or what we are used to eating.
- Step 6: Allow the students five to seven minutes to complete their sentences. Ask the students to go over their sentences with the as the lead teacher and researcher circulate the room. (Please refer to Appendix D for a sample of the worksheet).

Lesson three: Vary your colors

The third lesson was to have the students be more descriptive with a variety of fruits and vegetables. At this point, the participants were involved in two lessons and three intervention sessions, which allowed them to become more familiar with different fruits and vegetables. The researcher hoped to encourage the students to think of different fruits and vegetables based on their color alone.

- Step 1: Break the students up into two groups. The lead teacher will be in charge of one group while the researcher will be in charge of the other. Clearly state the instructions at the beginning of the lesson, so the students understand each activity and can effectively and fully engage during each component. Through these activities both groups are expected to achieve reciprocal determinism. The activities permit the

students to use their knowledge, classmates, and personal confidence to participate in the beanbag activity in addition to the written adjective worksheet. Behavioral capability could be achieved though the previous nutrition lessons taught from both the researcher and the head teachers. The students were able to apply that knowledge to this particular lesson in order for them to accurately and positively perform the behavior.

- Step 2: With one group, the researcher (or head teacher) will hold an assortment of colored beanbags. (The colors included red, yellow, orange, green, blue, and purple). At the start of the game, the researcher will lightly toss a colored beanbag to a student and he/she will then have to identify a fruit of that color. After the child gives an answer, the researcher will ask the remaining group members if that was a correct response. The student with the beanbag will toss it to another student where he/she will have to identify a vegetable of that color. Once a particular fruit or vegetable is identified it cannot be used again. The game continues until each colored beanbag is used twice. This particular lesson allowed the students to use their prior knowledge and peer-to-peer interaction to successfully achieve the activities. Again, through behavioral capability, modeling, and reinforcements from both the researcher and their peers, contributed to the lesson being highly effective. This game will last about 15 minutes.
- Step 3: While the game is going on, the second group will be at their desks completing a worksheet. The worksheet looks like a web. There

are two fruits and two vegetables in the center of the worksheet. Each fruit and vegetable has four lines extending from the word. The students need to use adjectives to describe these fruits and vegetables. The lead teacher gives them an example (not one of the fruits or vegetables being used on the worksheet) to offer them a better idea of what is being asked, which establishes behavioral capability. This will take 10 minutes to complete the worksheet. The group should be able to give some examples of their adjectives during the last 5 minutes of the lesson.

- Step 4: The lead teacher, researcher, and students should demonstrated excitement and positive reinforcement for their volunteered suggestions.
- Step 5: After each group completes their first activity, they then should switch to the other activity. (Please refer to Appendix E for a sample of the worksheet).

Lesson four: Food Art

The final lesson allows the students to work in groups to create artwork out of different fresh fruits and vegetables by following the design of a picture. Reciprocal determinism is a focal point for this lesson by allowing the students to believe in their ability to complete the assignment, having their peers assist in the project, and understand that the outcome of the activity is going to be new, exciting, and edible.

- Step 1: Have the students sit in front of a projector screen to watch a video, which will prompt the lesson. The video explains how the students can create artwork using different fruits and vegetables, and then will be able to eat their artwork once they have completed it.

- Step 2: Show the video (Wronko, 2015).
- Step 3: After the video ask the students to wash their hands and go back to their desks where they should be grouped together by 3's or 4's.
- Step 4: At their desk they will find a picture (fish, turkey, sun, palm trees, blow fish, and a butterfly) that are made of different fruits and/or vegetables, a paper plate, and a bag filled with pre-cut fruits and vegetables that reflect their group's particular picture. The students should work together to create a piece of art that resembles the picture in front of them with the fruits and/or vegetables that are in the bags. (Samples of the pictures will be in Appendix F).
- Step 5: After each group completes their artwork, the entire class should be prompted to walk around the classroom to admire each other's work. Finally, the students should taste their artwork along with others, by taking samples from each of the six groups masterpieces, which will exhibit both modeling and self-efficacy.

Data Collection

As mentioned in previous sections, pre and post surveys were given to each participant to receive a baseline and conclusion information based on the fruit and vegetable intervention. (Please refer to Appendix G for a copy of the post-assessment survey). The dates in which the lesson plans occurred for the two experimental classes were on January 28, January 29, February 4, February 5, February 18, February 19, February 25, and February 26, 2016. The active choice intervention lasted a total of nine sessions, where seven sessions were in the first intervention period and two

sessions were in the second intervention period. There was a three-week break between sessions. The average of participants in the first intervention was 43 and 45 participants in the second intervention. The data for the intervention days was gathered through ticket collection and the amount of fruits and vegetables taken on each particular day. The tickets allowed the researcher to examine how much of each fruit and vegetable were taken and from which group. It was difficult to determine food waste because the participants would not always remember to deposit their empty or partially eaten fruit/vegetable bags in the basket that was labeled "finished or uneaten produce".

Statistical Analysis

Data for this study was separated and analyzed to test the hypothesis in several parts to determine statistical significance. A p-value was set at $< .05$ to determine significance throughout the study's findings. First, the pre and post survey questions were examined in two parts. The numerical data was assessed through a paired t-test using Microsoft Excel, whereas the qualitative was analyzed through Chi-square Testing using SPSS. The information used to evaluate the intervention during lunchtime was through a z-group independent t-test using Microsoft Excel. The amount of total fruits and vegetables were averaged for each group for the first and second sessions to determine if the students in the experimental group (received nutritional lessons) took and consumed more fruits and vegetables than those in the control group (did not receive nutritional lessons).

Chapter 4: Results

After the participants completed the pre-assessment survey, the results indicated that the experimental group consisted of 61% female and 39% male, 58% are 7 years of age, and 42% are 8 years of age (n=47). There were 56% female and 44% male, 62% are 7 years of age, and 38% were 8 years of age in the control group (n=43). In the experimental group, 98% of the students specified that they thought fruits and vegetables were good for you and 43% would like the option to choose a healthy snack during lunch. One hundred percent of the control group reported that fruits and vegetables were good for you, but only 68% of them would want to choose their own healthy snack during lunch. When asked to select the types of fruits they liked most, both groups were consistent in the following fruits: watermelon (n=38 experimental and n=31 control), strawberries (n=37 experimental and n=34, control), grapes (n=36 experimental and n=32 control), oranges (n=34, experimental and n=31, control), and bananas (n=33 experimental and n=30 control). As for the vegetables, the top four vegetables in both groups consisted of carrots (n=26 experimental and n=30 control), broccoli (n=18 experimental and n=23 control), salad (n=17 experimental and n=17 control), and cucumbers (n-17 experimental and n=19 control). Please refer to *Tables 1 and 2* to compare their preference selection in each group based on the information received during the pre-assessment.

Table 1: Fruit preference from pre-assessment survey

Fruit	Experimental Group (n)	Control Group (n)
Watermelon	38	31
Strawberries	37	34
Grapes	36	32
Oranges	34	31
Bananas	33	30

Table 2: Vegetable preference from pre-assessment survey

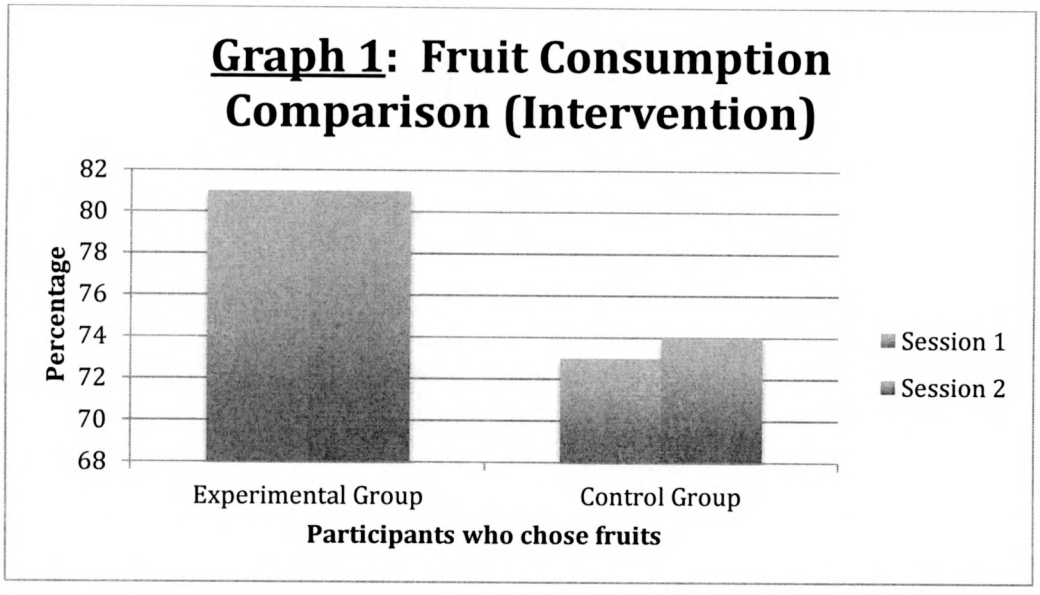
Vegetables	Experimental Group (n)	Control Group (n)
Carrots	26	30
Broccoli	18	23
Salad	17	17
Cucumbers	17	19

Many students in both groups disclosed that they brought fruits in as snacks more than vegetables (Appendix G), which is not surprising from a study discussed how children are born to prefer the taste of foods that are sweet over foods that are bitter or sour (Kral, Kabay, Roe, & Rolls, 2010).

The researcher originally hypothesized that the total fruit and vegetable consumption would increase for both the experimental and control groups due to the active choice intervention during lunchtime. Additionally, the researcher projected that the experimental group would consume a higher amount of fruits and vegetables due to

the participation of nutrition lessons during the study. Although the consumption for fruit and vegetables did reveal a high percentage taken for both groups during active choice days, results revealed that the nutritional lessons did not have a strong significance for those participants taking more fruits and vegetables than those in the control group.

The results indicated that the experimental group consumed, on average, the same amount of fruits from one intervention to the other (81%). The experimental groups, however, reduced their consumption of vegetables from 79% to 73%. The control group increased their fruit consumption slightly from 73% to 74%, however, their vegetable consumption increased significantly from 59% to 74%. (The total average of participants in the first and second interventions was 40). Please refer to *Graph 1: Fruit Consumption Comparison (Intervention), Graph 2: Vegetable Consumption Comparison (Intervention),* and *Tables 3 and 4: Active Choice Results* for a comparison of each session.



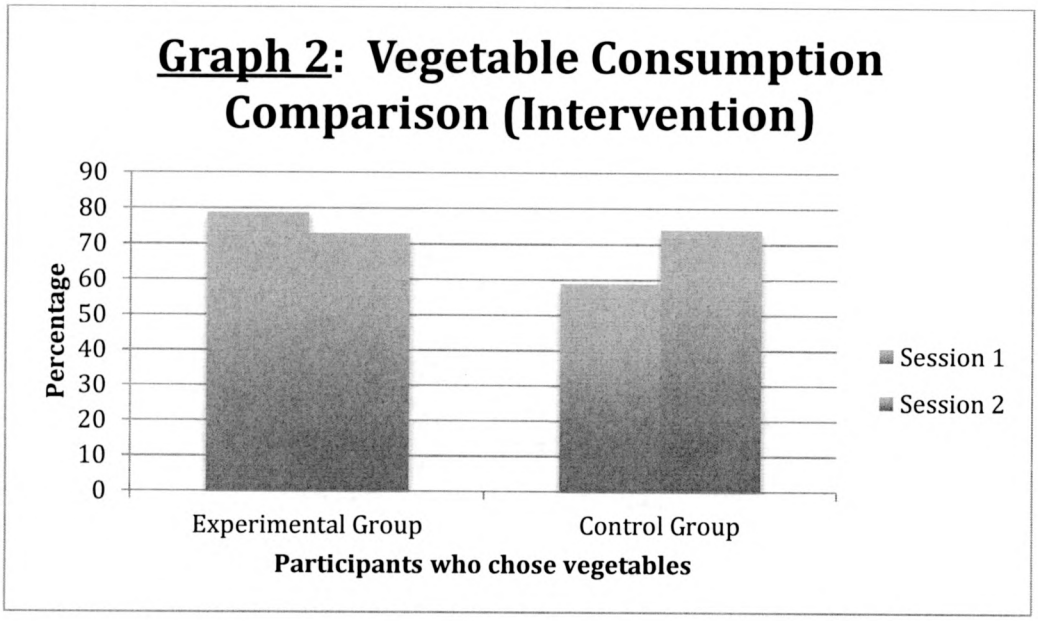


Table 3: ***Active Choice Results*---Session 1 Comparison**

	Experimental	Control	p-value
Fruits: *Raw Count*	35.29	29.71	0.07
Fruits: *Percentage*	81	73	0.21
Vegetables: *Raw Count*	34.29	23.86	0.002
Vegetables: *Percentage*	79	59	0.005

Table 4: ***Active Choice Results*---Session 2 Comparison**

	Experimental	Control	p-value
Fruits: *Raw Count*	35.50	29.50	0.21
Fruits: *Percentage*	81	74	0.45
Vegetables: *Raw Count*	33	29.50	0.57
Vegetables: *Percentage*	73	74	0.97

The original hypothesis was for the participants in the experimental group to consume more fruits and vegetables due to receiving nutrition lessons. After the

conclusion of the study, the results did not prove to be significant. (Refer to Appendices H & I for the post-survey and post-survey results) Question one in the pre and post-surveys asked the participants to indicate when they bring fruits to lunch do they finish their fruits, bring remaining fruits home, throw away remaining fruits, or they do not bring fruits with their lunch at all. The results disclosed that both the experimental and control groups significantly improved the total amount of fruit finished during lunch (63% to 69.6% for the experimental group and 44.2% to 51.2% for the control group) with p-values going from <. 05 to <. 048, which showed significance. The results also identified that 30.2% of the control group did not bring fruits with their lunch during the pre-survey, but that figure declined to 18.6% in the post-survey. This did reveal some significance because those students did not receive the nutritional lessons. The experimental group stayed consistent (8.7%) during both the pre and post-surveys.

The second question in the questionnaire asked the participants to disclose if they brought vegetables to eat with their lunch do they finish all of their vegetables, bring home their remaining vegetables, throw out their remaining vegetables, or did they not bring vegetables at all. The results were not as hopeful as the researcher intended. The experimental group went from 52.2% to 43.5% of finishing all of their vegetables whereas the control group results also declined from 46.5% to 39.5%. The data indicated a consistent 26.1% from the experimental group in which they do not bring vegetables to eat with their lunch from pre and post surveys. However, the results from the control group increased from 34.9% to 37.2%. Although a there is a pattern, there was no significance.

The active choice experiment, allowing participants to choose from two fruit and two vegetable options on intervention days, proved to have significance and give validity to this study. According to the results of question three, members of the experimental group went from 78.3% to 84.8% for wanting to make their own healthy snack choice during lunchtime. Those participants who said they were first unsure about wanting to choose their own healthy snack went from 19.6% to 6.5%. A p-value of <. 013 was determined for the post-survey results relating to active choice, which was significant.

The participants of both groups demonstrated consistency when answering the question whether they thought fruits and vegetables were healthy. The experimental group went from 95.7% to 100% of students recognizing that fruits and vegetables are healthy, however, the control group had a slight decline from 97.7% to 95.3%. Again, a pattern was present but no significance.

As the results indicated, most of the participants had a higher preference for fruits over vegetables. Although the percentages varied for liking both fruits and vegetables the same amount, the overall results were higher than anticipated. Students in the experimental group went from 52.2% to 50% of liking fruits the most, where as the control group stayed a constant 58.1% for both pre and post survey results. The experimental group was consistent with preferring both fruits and vegetables the same (45.7%), whereas the control group slightly declined from 37.2% to 34.9% after both surveys. A pattern was present, however, it was determined that there was no significance.

Question six was only offered as a post-survey question, which asked the participants to indicate if they wanted to consume more fruits and vegetables due to the active choice intervention. Although there was no statistical significance within the results, it was determined that the experimental group was more likely eat more fruits and vegetables (80.4%) as compared to the control group (62.8%). Please refer to *Table 5: Experimental vs. Control C*omparison (Pre and Post Surveys) for all results.

Table 5: ***Experimental vs. Control Comparison*** **(Pre and post surveys)**

Question	Pre-survey Ex. vs. Ct. %	p-value	Post-survey Ex. vs. Ct. %	p-value
Q1: *Fruits with lunch*	63, 44.2 (finish) 21.7, 23.3 (bring home) 6.5, 2.3 (throw out) 8.7, 30.2 (do not bring)	.051	69.6, 51.2 (finish) 15.2, 30.2 (bring home) 6.5, 0 (throw out) 8.7, 18.6 (do not bring)	.048
Q 2: *Vegetable with lunch*	52.2, 46.5 (finish) 15.2, 11.6 (bring home) 26.1, 34.9 (do not bring)	.818	43.5, 39.5 (finish) 26.1, 23.3 (bring home) 26.1, 37.2 (do not bring)	.408
Q3: *Active Choice*	78.3, 69.8 (yes) 2.2, 4.7 (no) 19.6, 25.6 (unsure)	.613	84.8, 65.1 (yes) 8.7, 4.7 (no) 6.5, 30.2 (unsure)	.013
Q4: *Are fruits & vegetables healthy*	95.7, 97.7 (yes) 4.3, 2.3 (unsure)	.597	100, 95.3 (yes) 0, 4.7 (unsure)	.139
Q5: *Preference*	52.2, 58.1 (fruits) 0, 4.7 (vegetables) 45.7, 37.2 (both) 2.2, 0 (neither)	.308	50, 58.1 (fruits) 4.3, 4.7 (vegetables) 45.7, 34.9 (both) 0, 2.3 (neither)	.576
Q6: (Post only) *Do you want to eat more fruits & vegetables*	N/A	N/A	80.4, 62.8 (yes) 4.3, 11.6 (no) 15.2, 25.6 (unsure)	.162

Although most of the results within experimental group from pre and post-surveys did not prove to be statistically significant in all areas, the amount of vegetables they brought for lunch did display the most meaningful results. The participants in this group disposed of less vegetables (6.5% to 4.7%) and more brought their remaining vegetables home (15.2% to 20.9%) after the active choice intervention was complete. Please refer to *Table 6: Experimental Comparison* for all results.

Table 6: *Experimental Comparison*

Question	Pre-survey %	Post-survey %	p-value
Q1: *Fruits with lunch*	63 (finish) 8.7 (do not bring)	69.6 (finish) 8.7 (do not bring)	.942
Q 2: *Vegetable with lunch*	52.2 (finish) 15.2 (home) 6.5 (throw out) 26.1 (do not bring)	43.5 (finish) 26.1 (home) 4.3 (throw out) 26.1 (do not bring)	.050
Q3: *Active Choice*	78.3 (yes) 19.6 (unsure)	84.8 (yes) 6.5 (unsure)	.234
Q4: *Are fruits & vegetables healthy*	95.7 (yes)	100 (yes)	.360
Q5: *Preference*	52.2 (fruits) 0 (vegetables) 45.7 (both) 2.2 (neither)	50 (fruit) 4.3 (vegetables) 45.7 (both) 0 (neither)	.733

Many of the values discovered when comparing the results within the control group from the pre and post-surveys did not prove to show statistical significance, such as the consumption of fruits and vegetables when brought from home as part of their lunch, healthfulness of fruit and vegetables, and preference of fruit or vegetables. With the exception of students who did not bring in fruits for lunch went from 30.4% to only

17.5% after the intervention was complete, the results from pre and post-surveys were not significant. Please refer to *Table 7: Control Comparison* for all results.

Table 7: *Control Comparison*

Question	Pre-survey %	Post-survey %	p-value
Q1: *Fruits with lunch*	44.2 (finish) 30.2 (do not bring)	51.2 (finish) 18.6 (do not bring)	.392
Q 2: *Vegetable with lunch*	46.5 (finish) 34.9 (do not bring)	39.5 (finish) 37.2 (do not bring)	.131
Q3: *Active Choice*	69.8 (yes) 25.6 (unsure)	65.1 (yes) 30.2 (unsure)	.625
Q4: *Are fruits & vegetables healthy*	97.7 (yes)	95.3 (yes)	.476
Q5: *Preference*	58.1 (fruits) 4.7 (vegetables) 37.2 (both) 0 (neither)	58.1 (fruit) 4.7 (vegetables) 34.9 (both) 2.3 (neither)	.580

Chapter 5: Discussion

According to previously published studies relating to fruit and vegetable consumption, one consistent element was the importance of a diet high in fruits in vegetables relating to one's overall health. A diet that has high levels of fruit and vegetables over one's lifetime can reduce the risk of contracting certain diseases such as cardiovascular, diabetes, stroke and cancer (Li & Levy-Milne, 2008). The participants were asked in pre and post-surveys whether they thought fruits and vegetables were good for them. Almost 96% from the experimental and 97.7% from the control group unveiled that fruits and vegetables are good for you during the pre-survey. Post survey results showed an increase of 4.3% (100%) for the experimental group and a slight decrease of 2.4% (95.3%) for the control group. One can theorize that exposing the

experimental group to nutrition lessons assisted in the results going from 96-100% after the pre and post-surveys. However, the overall figures from both the experimental and control groups did not display enough statistical significance to validate that the nutrition lessons alone are what affected the increase.

Although slightly more than half of the students in both the experimental group and one third of the students in the control group disclosed that they like both fruits and vegetables the same, most of the students still prefer fruits to vegetables. The students in the experimental group went from 52.2% to 50% of preferring fruit over vegetables, whereas the control group remained the same at 58.1%. As demonstrated in the literature, it is not surprising that the participants would favor fruits over vegetables due to an individual's natural predisposition to prefer sweet over foods that are sour or bitter (Kral, Kabay, Roe & Rolls, 2010). There was no surprised to see the preference for only vegetables to be significantly lower than to fruits (4.3% for the experimental group and 4.7% for the control group), however, the amount that they revealed liking both fruits and vegetables the same was much higher than anticipated. The experimental group remained the same with 45.7% while the control group slightly declined from 37.2% to 34.9%.

During the active choice intervention, students in the experimental group remained consistent from the first session to the second with choosing fruits 81%, however, they slightly declined with their vegetables from choosing them 79% to 73%. The researcher speculates that the decrease could have been due to several variables such as attendance rate from one session to the other, the variety of produce that was served, and the amount of lunch and snacks that was packed or served.

The educational lessons were all based on the constructs of the SCT in order to increase fruit and vegetable consumption during lunchtime. Informal observations made during the lessons revealed that the participants were actively engaged, used encouraging words, demonstrated supportive comments from both adult-to-student and from peer-to-peer, modeled positive behavior, and, most importantly, engaged in self-efficacy.

Overall, the lessons allowed the students to be introduced and develop a familiarity of a variety fruits and vegetables through the senses of taste, touch, smell, and sight. The students were able to gain knowledge and understanding about why fruits and vegetables are important to the body at every age, basic concepts of vitamins and minerals and how they protect our body from getting sick, how each color of a fruit and vegetable delivers different healthy components (nutrients) to the body, and recognize the difference between healthy and unhealthy snacks. The participants in the control group chose fruits an average of 73% in the first session and went up to 74% in the second session. As for vegetables, this group showed the highest increase from 59% to 74% from one session to the next. It is fair to say that the nutrition lessons did not have a big impact on whether the participants chose fruits or vegetables, however, there was speculation that if the active choice experiment was done at two different elementary schools the efforts of the nutrition lessons could still have a significant impact of fruit and vegetable consumption over students who did not receive the lessons.

Prior to beginning the active choice intervention days, the students were asked to determine if they would like to (or did like [post-survey]) choose their own healthy

snack during lunchtime. Although the results determined no statistical significance during the pre-survey, the post-survey results proved to display more meaningful value. Most students in both groups were very enthusiastic about the idea being able to choose their own healthy snack (78.3% for the experimental group and 69.8% for the control group). Only a small percentage of students did not want to choose, while the remaining where unsure if they wanted to choose. As the intervention went on and both sessions were complete, the students in the experimental group revealed that an increase of 6.5% (84.8%) liked to choose their own healthy snack while a slight decrease of 4.7% (65.1%) liked choosing their own healthy snack. There was a larger increase of students in the control group that still were uncertain if they wanted to continue choosing their own healthy snack during lunch if it was available to them (25.6% to 30.2%), whereas the results from the experimental group declined notably from 19.6% to 6.5%.

Some of the results could have been due to the experimental group having more exposure to the researcher throughout the study when receiving the nutrition lessons. Those lessons exposed the students to repetitive content along with additional understanding of why fruits and vegetables are healthy. That exposure could have allowed them to have higher results than the control group. Sometimes a preview would be given to the experimental group of what fruits and vegetables were going to be on the menu in the upcoming weeks, while some days she would talk to them about the selection of produce that was given during previous intervention days. Moreover, a stronger rapport was developed with the experimental group and the researcher than with the control group because she was able to spend more time with those students

during the nutritional lessons. Through this information and the results presented, there is reason to believe that this type of design could display the potential success for a larger impact when combining nutrition education with an active choice component (Perry et al., 2004).

An essential construct of the SCT, self-efficacy, is demonstrated when the participants exhibit confidence in the ability to perform the behavior at hand (Gaines & Turner, 2009). For this particular study, the participants were actively engaging in the behavior by going up to the fruit and vegetable table and looking at the menu for each intervention day. At that point, the participants were able to decide whether they wanted a fruit, a vegetable, both a fruit and a vegetable, or nothing at all. Even if the students (no matter which group they were in) did not take a fruit and/or vegetable that day, they still engaged themselves within the intervention process. By the participants physically walking up to the fruit and vegetable table from where they were sitting established that they were willing, at the very least, to attempt the effort of the behavior change by looking at what was available for them.

The participants were asked to disclose what they do with the fruits they bring for lunch, and only a small percentage of them indicated that they did not bring any fruits with them for lunch. There was, however, a noteworthy difference within the pre-test for both groups where the experimental group, 63% of their members finished all of their fruit and only 44.2% of the control group finished all of their fruit. More of the students in both groups consumed all of their fruits in the post-survey (69.6% for the experimental group and 51.2% for the control group). Only a small percentage of them threw out their remaining fruit (6.5% for the experimental and 2.3% to 0% for the

control group). When the participants either brought home or threw out their remaining fruit, portion size of the fruit was considered in relation to the child's decision to not finish what was given to them. This information of correct portion size versus portions given from home could be useful information a follow up study.

It was not surprising that many of the participants in both groups did not bring vegetables as a snack during lunch. About 26% from the pre and post-surveys still did not bring vegetables as a snack during lunch for the experimental group and 34.9% to 37.2% for the control group. The researcher admits through this study it was difficult to find a wide variety of vegetables that were palatable raw (uncooked), so the results for this question were not unexpected. Although a slight decline of 8.7%, (52.2% to 43.5%) students in the experimental group finished their vegetables during lunch and the students in the control group went from 46.5% to 39.5%. The researcher was also pleased to see that the waste of vegetables went down from 6.5% to 4.3% for the experimental group and 7% to 0% for the control group.

The participants were asked a post-only question to determine if the active choice intervention influenced them to want to continue to eat more fruits and vegetables at both home and in school. The students in the experimental group revealed that 80.4% would want to eat more fruits and vegetables while only 62.8% of the participants in the control group agreed. Only 4.3% from the experimental group while 11.6% of the participants in the control group were not encouraged to eat more fruits and vegetables. Finally, 15.2% of the participants in the experimental group and 25.6% of the participants in the control group were unsure if this active choice intervention made them want to choose fruits and vegetables more often. Again, even though the p-

value does not display statistical significance between groups, there was data that indicated the nutrition lessons did assist in the results being so skewed from one group to the next. The nutrition lessons allowed those participants not only to understand the health associations with a diet filled with fruits and vegetables, but how including fruits and vegetables in your diet can be fun, exciting, and nutritious all at the same time.

When comparing the results within each group, some new and valuable patterns are presented. It was interesting that there was an increase of 6.8% of participants in the experimental group and an increase of 9% of participants in the control group that finished all of their fruit from before beginning the intervention until after. Another interesting set of results revealed that fewer students in the experimental group brought their fruits home (a difference of 7.7%). Students in the control group went from 2.2% throwing the remaining fruit in the trash to none of them throwing the remaining fruit in the trash. Also, a decrease of 12.9% revealed that they do not bring fruits to eat with their lunch from the control group.

Unfortunately, the patterns for both the experimental and control groups did not disclose anything significant for the consumption of vegetables. In fact, the data from within both groups during the pre and post-surveys revealed that there was more of a decline in consumption and even bringing in vegetables to eat with their lunch than the researcher anticipated. One could wonder whether the variety that they are given by their parent/guardian is ample, or the parents/guardians do not even bother giving them vegetables with their lunches because they think it may be wasted.

There was an increase of 5.4% of students in the experimental group liking the fact that they could choose their own healthy snack during lunchtime from the pre to

post-surveys. Those same students demonstrated a substantial decrease of 12.6% when asked if they were 'unsure' if they wanted to choose their own healthy snack during lunchtime. These encouraging results can depict a pattern that is likely linked to the educational lessons that were given to this group compared to the control group. The same question for the control group revealed a decline of 9.2% of students liking the active choice option during lunchtime, and an increase of 8.6% of those participants who were unsure if they wanted to choose.

As mentioned earlier, the participants in both groups determined the importance of fruits and vegetables to the body. Not one participant from either group disclosed that they thought fruit and vegetables were not important to the body. Results from the experimental group revealed that the students went from 95.7% to 100% believed that fruits and vegetables were healthy for the body, while there was a slight decline in the control group from 97.8% to 95%. Again, the researcher can consider the value of incorporating nutrition education lessons to not only the participants' behavior actions, but also increasing their overall knowledge about fruits and vegetables in hopes that the behavior will continue to grow and develop in years to come.

Lastly, results were compared within each group for the participants' preferences of fruits and vegetables. The researcher found the results of the experimental group especially interesting. The preference of fruits decreased by 3.4% while the preference of vegetables increased from 0% to 4.7%. The exposure to the nutrition lessons could have had an impact on the increase of vegetable preferences, which, in turn, offset the fruit preference. Similar findings were represented during a study in 2004 where the Cafeteria Power Plus project was implemented to increase the

consumption of fruits and vegetables during lunch as a multi-component intervention (Perry et al., 2004). During the current study, there was a slight increase (0.8%) of the participants liking both fruits and vegetables the same. Finally, the students revealed at the beginning of the study that 2.2% did not like fruits or vegetables to 0% after the study was complete. The researcher could hypothesize several theories of why these patterns seem to hold more value than those of the control group, but having the exposure of a variety of fruits and vegetables within the nutrition lessons as well as having a choice between different fruits and vegetables likely made the results slightly more meaningful. Although there were not significant changes within the control group, only the preference for fruit increased by 3.5%.

It is possible that the consumption of fruit and vegetables during the active choice intervention sessions could have been increased or decreased due to peer-to-peer encouragement. Although this type of study was not designed to present a peer pressure situation, many times children are exposed to peer pressure without even recognizing it. A student in one group may be a friend with a member in another group. Their verbal or non-verbal (facial expressions) could have determined a participant's selection of fruit and/or vegetable or determined if they were not going to take any produce for that day. Peer pressure, however, does not always have to be negative. In many ways peer pressure can be used to encourage others to do things they would not normally do because they are unsure about the outcome (Cullen et al, 2001). If a participant encourages another participant to try a new fruit and/or vegetable or try something they like, the other participant may be more likely to engage in the behavior because they have the support of their friend (O'Niell, 2012).

Finally, many parents within both groups sent various messages of encouragement and gratitude for having their child in the study. Messages were mainly comprised of how they were thankful for exposing their children to a variety of fruits and vegetables and making the students want to eat them. Some asked the researcher for advice and suggestions to make eating fruits and vegetables fun at home to keep up their excitement and interest in fruits and vegetables.

Chapter 6: Conclusion

While previous studies have provided excellent notions on increasing fruit and vegetable consumption for school children, many have not combined theoretical avenues, which could lead to more sustainable outcomes (Baranowski et al., 2013, Just & Price, 2013, Kral, Kabay, Roe & Rolls, 2010, and Upton, Upton & Taylor, 2012). The present study offered a design based on the constructs of the SCT and active choice principles to increase fruit and vegetable consumption during lunchtime for second grade students. The role of the SCT provided a guided theoretical framework in which reciprocal determinism reflected the continuous interaction among personal factors, the environment, and behavior (active choice concept). The interactive connection among these three components is crucial because if one part changes, the other two components will also be affected. Another significant component to the SCT is self-efficacy. Nutrition education programs in schools and communities need to do a more effective job promoting confidence when adopting healthy eating behaviors among youngsters. Allowing students to have repeated measures of exposure, an easy to follow set of instructions, and sense of connection or importance between themselves and the

behavior at hand can help promote mastery of skills, thus can increase one's level of self efficacy.

The original hypothesis proposed that the students in the experimental group, who were receiving nutritional based lessons on fruits and vegetables, would consume more than the control group, who were not receiving nutritional lessons, however, the present findings demonstrated a limited effect. The concept of this design holds great potential for future research, however, results may determine a more significant outcome if using several schools instead of just one. Additionally, increasing the timeline of this study with multiple sessions could reveal further data that may grow the validity of the study for a fundamental and sustainable program to be put into practice. Combining supplementary components such as parental/guardian, family practices, and community involvement could assist in enhancing the effectiveness of this program design.

Chapter 7: Limitations & Implications for Further Research

The researcher acknowledged several limitations within this study. First, the lack of funding restricted the expansion of the study to a larger population size. It would have been beneficial to include the second elementary school in town in the study to increase internal validity, however, the decline of nominal support from several outside companies, programs, and grants limited the study to only one school. The researcher suspects that if there were enough funding and was able to separate the experimental group and control group into two different schools, they results for one of the hypothesis (students receiving nutritional lessons would consume more fruits and vegetables compared to students who did not receive lessons) may have been different.

With larger funds, the study could be implemented in several areas throughout Bergen, Essex, Passaic, and Hudson Counties to increase validity and prospect that the data could be compared to the general population.

In addition to the total population, there was not a wide array of participants with different socioeconomic status, geographic location and ethnic background. Restricting the study to only one school in one town in Southern Bergen County, New Jersey limited the authenticity of this particular study. The overall consumption of fruits and vegetables during lunchtime may not have been as successful in a population with less exposure to fruits and vegetables on a daily basis, lack of parental support, and/or a lower overall socioeconomic status. Also, most of the participants were excited to learn and try different fruits and vegetables that they have not heard of or tried before. The positivity and willingness to try new fruits and vegetables may not be as prominent in another population.

Time was another limiting factor for this study. Although the results may have been consistent with what was done within the time of this study, an intervention that lasted more than a month and had a longer follow-up period may reveal different outcomes. Even though this study established a baseline for future studies, other researchers may want to look into utilizing an entire school year with multiple follow periods and possible continue into the following school year to establish reliability to this type of intervention.

Whenever pre and post surveys are used as a mean to determine food consumption and knowledge based questions, one has to question the authenticity of the participants' responses. The students may not have been as truthful when answering the

questions based on their consumption of fruits and vegetables. Although it was explained that all of the surveys were anonymous, some of the participants may have put down information that they thought would have pleased the researcher rather than information that was truthful to their own eating habits. Some of the results were very similar to one another. One can speculate that the participants may have asked other classmates that were sitting close to them what fruits and/or vegetables they were checking off so they would put down the same information. Also, some of the participants may have skipped over some fruit or vegetables that may not have been familiar with. Instead of asking either the researcher or the head teacher what a particular fruit or vegetable was, they may have decided to skip over those responses. Lastly, some of the participants did not realize they could have checked more than one response to indicate all of the fruits and vegetables they liked from the list that was provided for them. Some of them asked if they could go back, but once the survey is submitted through GoogleForms, you cannot go back to your individual survey.

Another limiting factor was on an intervention day where blood oranges were offered as one of the fruit choices. A majority of the blood oranges were not taken, because the participants literally thought there was blood in the oranges. It is clear that the information was not effectively communicated with the participants that there was no actual blood in the oranges, but they were just a different type of orange with slightly different characteristics of a traditional orange. The following day, the researcher cut up enough blood oranges for each class and explained that they should not be fearful of this fruit or any fruit or vegetable that is given to them during this intervention. It was explained to the participants that this particular orange just had a red color, but tastes

just as sweet, if not sweeter, than a traditional orange. The researcher clarified that just like apples have different color skins and some taste sweet and others taste tart they are all still classified as apples. Many of the children were more open to trying the blood oranges after they were confident that there was not blood in them. Future research may want to make it clear to their participants of each fruit and vegetable they are offering. Variety is still important, but because many of them are so literal at that age, they need to be reassured that what they are choosing is in fact safe, tasty, and healthy.

Even though the distribution of a variety of vegetables were offered without repeating any for the first session, it was difficult to include some vegetables that would have been more palatable if cooked. Also, many vegetables that needed additional preparation were off limits because the basis of this study was to implement fresh produce. During the second session, however, the students were able to choose butternut squash, which was roasted a day ahead of time. This was the only vegetable during the intervention that was cooked. Although keeping the produce in its natural state will tend to be healthier, future studies may want to utilize a school kitchen to be able to cook certain vegetables using nutritious methods of preparation.

Although reinforcements is an important construct to the SCT, there are reasons to consider whether the participants would have been as willing to engage in the behavior (eating fruits and vegetables during lunchtime) if the reinforcements were not present. Many of the participants could have been looking for approval from the adults present, which could have been a prominent factor why they took a fruit and/or vegetable on intervention days. However, in this particular study the only physical reward they received was at the end of the intervention. They all received a set of

stickers and a pencil for their participation. They did not receive any individual rewards for each intervention they participated in. Nevertheless, the follow-up results did disclose that students in the experimental group consumed 81% percent of fruits and 73% of vegetables after the follow up session and the control group consumed 74% for both fruits and vegetables. As mentioned in Chapter 2, several studies in fact suggest that the use of rewards (whether tangible or verbal) can not only increase initial participation in addition to allowing repeated measures of taste and exposure to different fruits and vegetables to increase overall consumption well after the intervention was complete (Horne et al., 2004, Just & Price, 2013, and Lowe & Horne, 2009).

As cited earlier, the Food Dudes Program combined small rewards along with a set of peer modeling videos to reinforce the importance of consuming fruits and vegetables. In addition to the successful results, many teachers and parents who were a part of implementing the program revealed they not only saw an increase amount of fruits and vegetables being consumed at lunch, but many would ask for them at home after the program was complete (Lowe & Horne, 2009). Future studies may want to incorporate more of a balance of reinforcements and rewards to not just increase fruit and vegetable consumption, but to able to continue these habits once the program is complete.

Although the support of the parents was bountiful, the researcher would have liked to have more parental involvement within the study. Data from a parental pre and post surveys in addition to providing short seminars on how parents could easily incorporate more fruits and vegetables at home could prove to be more of an effective

way to improve upon the study's results. Future studies may benefit from being able to include information from the parents as well as providing them with quick and useful techniques to assist in increasing fruit and vegetable consumption both in school and at home.

Lastly, food waste was an area the researcher originally planned to measure, however, due to the participants' inconsistency with placing the empty or partially empty bags in the specified area, accuracy of measuring plate waste was unable to occur. If there were additional team members to assist during lunchtime, a more effective way of attaining all of the bags could have been implemented in order to attain accurate data. This information would have been significant to the effectiveness of the study to determine not just that the participants' were taking the fruits and vegetables, but to determine how much they were consuming on that particular intervention day.

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Appendix A: *Cover Letter*

John J. Hurley
Superintendent of Schools

Frank Morano
Principal

Billy Cunningham
Assistant Principal

Shannon Hopkins
Director of Guidance

56 Elliott Place
Rutherford
New Jersey 07070
Phone: 201-438-7675
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RUTHERFORD HIGH SCHOOL

A National School of Excellence

THESIS TITLE: The role of nutrition education and active choice to increase fruit and vegetable consumption among second grade students during lunchtime.

INTRODUCTION

My name is Robyn Cafiero and I am the nutrition and foods educator located in the high school. I'm currently working on my master's degree from Montclair State University where I am studying nutrition education. As part of my studies, I am conducting a small study that can benefit students in making healthier snack choices during lunchtime. Your child has been invited to join a research study to look at how to increase fruit and vegetable consumption during lunch. Please take the time to discuss the study with your family. The decision to let you child join, or not to join, is up to you, but I would ask if the consent form could be handed back to your child's teacher no later than ***Monday, January 11, 2016.***

WHAT IS INVOLVED IN THE STUDY?

Your child will not be asked to do anything out of the ordinary from his/her daily school routine. I will first be evaluating their knowledge, consumption, likes, and dislikes on fruits and vegetables. In mid-January, the students will be invited to select a small portion of a variety of fruits and vegetables to add to their lunch for no extra cost. The goal is to allow the child to make his/her own choice for a fruit or a vegetable. Research has shown when children are able to be a part of the decision making process, they are more likely to engage in the activity. The "choice" option will be implemented two days per week for one month. There will then be a short break before we begin the second session. The second session will only last one week instead of four. Your child will not be forced to take a fruit or vegetable during this study. It will be done completely on their own free will. A post-assessment survey will be given to the students to evaluate their progress throughout the study. The study will be complete on or before Friday, April 22, 2016.

Please read and sign the attached parental consent and child assent forms. Even if you choose not to have your child participate in the study I will need the forms back by

January 11, 2016. Thank you again for your time. Please feel free to contact me with any questions or concerns at rcafiero@rutherfordschools.org.

Warm Regards,
Robyn Cafiero, M.S.
Teacher of Nutrition and FCS

Appendix B: Pre-assessment Survey

Pre-assessment Participant Questionnaire

Directions: Please answer all of the questions the best you can. Thank you for taking the time to answer the questions!

1. How many days a week do you bring fruit to eat with your lunch or snack?
    a. 0 (no) days
    b. 1 day
    c. 2 days
    d. 3 days
    e. 4 days
    f. 5 days

2. If you bring fruit to eat with your lunch do you:
    a. usually finish all of my fruit
    b. usually take home my fruits that I do not finish
    c. I usually throw out my remaining fruit
    d. I do not bring any fruits to eat with my lunch

3. How many days a week do you bring vegetables to eat with your lunch?
    a. 0 (no) days
    b. 1 day
    c. 2 days
    d. 3 days
    e. 4 days
    f. 5 days

4. If you bring vegetables to eat with your lunch do you:
    a. usually finish all of my vegetables
    b. usually take home my vegetables that I do not finish
    c. I usually throw out my remaining vegetables
    d. I do not bring any vegetables to eat with my lunch

5. During snack time, how many times a week do you have a fruit or a vegetable as a snack?
    a. 1 day
    b. 2 days
    c. 3 days
    d. 4 days
    e. 5 days
    f. I never bring fruits or vegetables to eat during snack time

6. Please click on all of the fruits you like to eat.
   a. apple
   b. orange
   c. banana
   d. cherries
   e. grapes
   f. strawberries
   g. blueberries
   h. cantaloupe
   i. pineapple
   j. pear
   k. plum
   l. peach
   m. watermelon
   n. honeydew melon
   o. other: _____
   p. I do not like fruit

7. Please click on all of the vegetables you like to eat
   a. cucumbers
   b. tomatoes
   c. broccoli
   d. carrots
   e. peppers
   f. celery
   g. green beans
   h. spinach
   i. kale
   j. asparagus
   k. cauliflower
   l. eggplant
   m. salad
   n. edamame (soybeans)
   o. other: _____
   p. I do not like vegetables

8. Would you like to be able to choose your own healthy snack during lunch?
   a. Yes
   b. No
   c. I don't know

9. Do you think fruits and vegetables are good for you?
   a. Yes
   b. No
   c. I don't know

10. Which do you like more, fruits or vegetables?
    a. Fruits
    b. Vegetables
    c. I like them both the same
    d. I do not like fruits or vegetables

11. How old are you?
    a. 6 years old
    b. 7 years old
    c. 8 years old

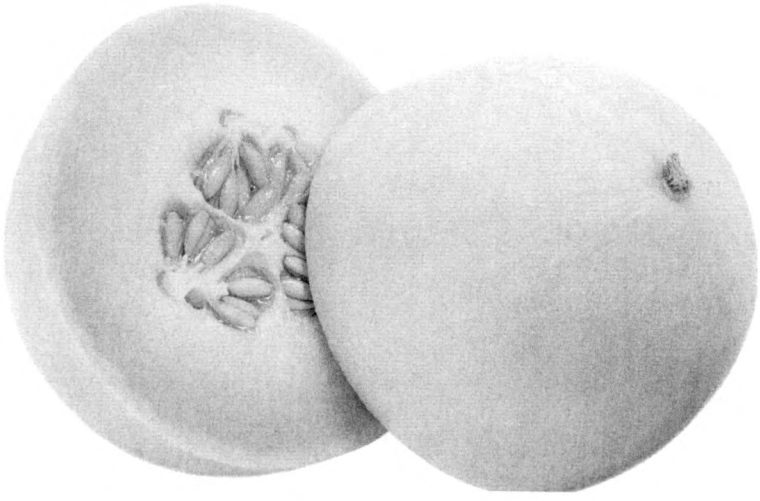
12. Are you a:
    a. boy
    b. girl

Thank you!

Appendix C: Sample Menu

TODAY'S FRUITS

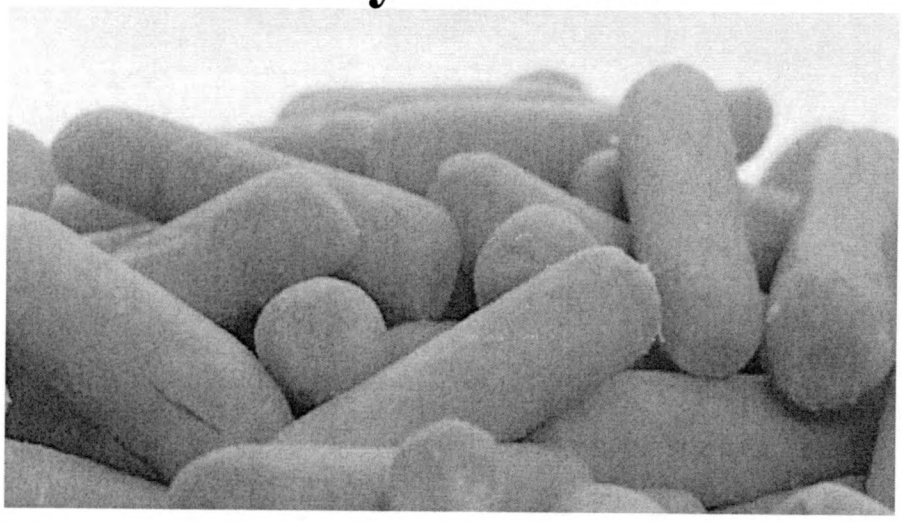
Honeydew Melon



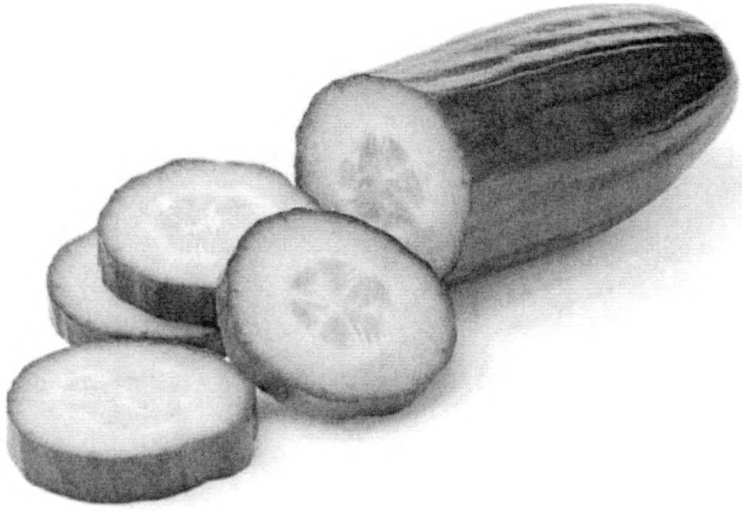
Grapes

TODAY'S VEGETABLES

Baby Carrots



Cucumbers



Appendix D: Nutritional Lessons---Food Manners Worksheet

Healthy Snacks	**Unhealthy Snacks**

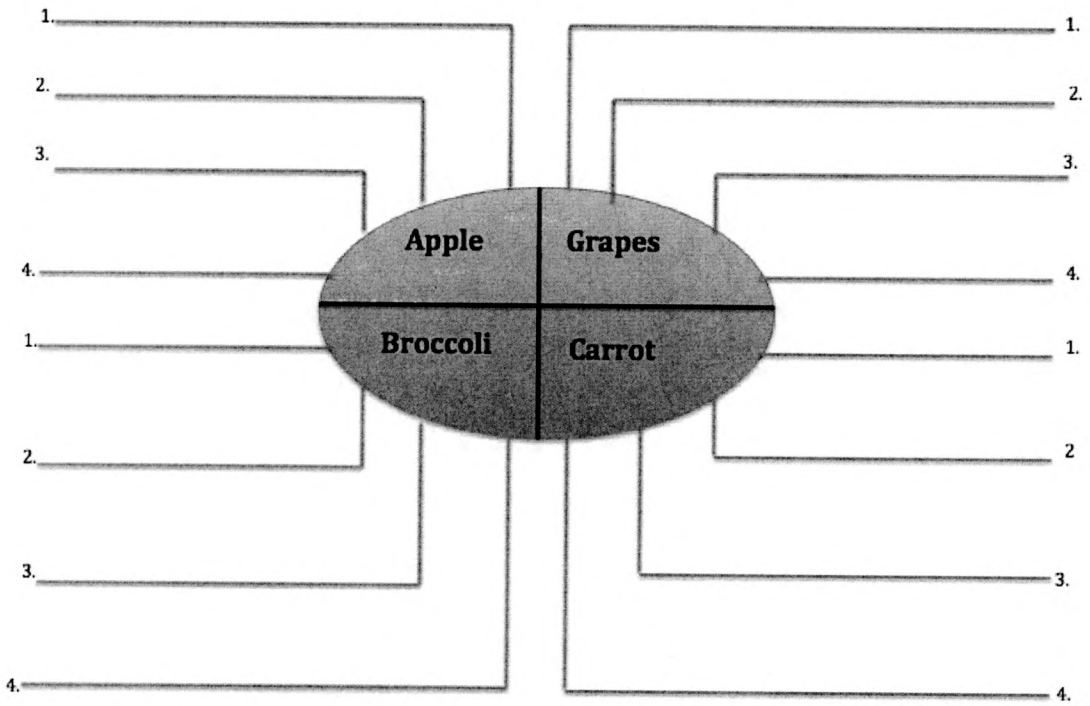
Directions: **Write a sentence explaining why fruits and vegetables are important for your body. Write another sentence why we shouldn't make fun of other people for eating foods that may be different from what you eat.**

1.

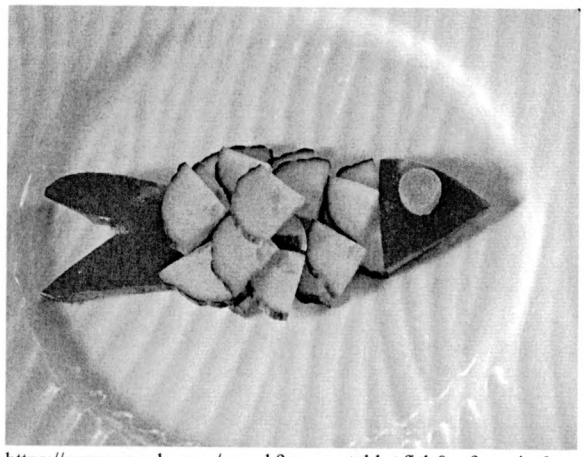
2.

Appendix E: Nutritional Lessons---Fruit and Vegetable Web

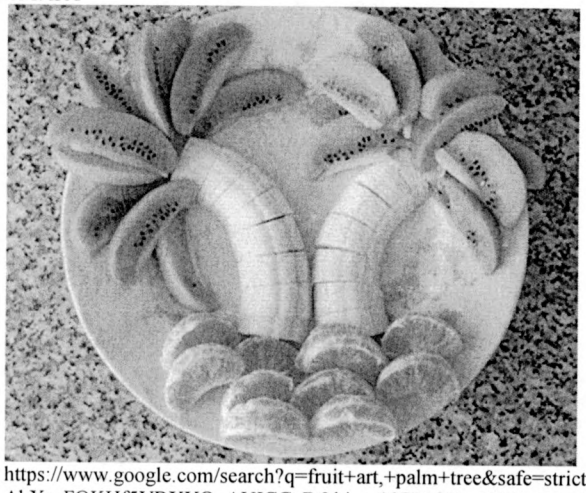
Directions: Write four *adjectives* describing the following fruits and vegetables.



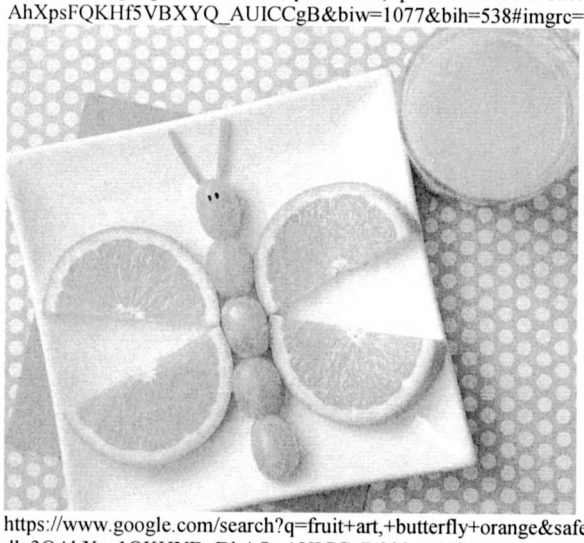
Appendix F: Nutritional Lessons---Food Art



https://www.google.com/search?q=vegetable+fish&safe=strict&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjP_drEmI3QAhVmqVQKHT6GDpEQ_AUICCgB&biw=1077&bih=538#safe=strict&tbm=isch&q=vegetable+fish%2C+kids&imgrc=4uj_2Iz6dSHl6M%3A



https://www.google.com/search?q=fruit+art,+palm+tree&safe=strict&source=lnms&tbm=isch&sa=X&ved=0ahUKEwic2suwlo3QAhXpsFQKHf5VBXYQ_AUICCgB&biw=1077&bih=538#imgrc=bv51Wa1z-vlNLM%3A



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Appendix G: Pre-assessment Results

Experimental Group

Timestamp	How many days a week do you bring fruit to eat with your lunch?	How many days a week do you bring vegetables to eat with your lunch?	If you bring fruit to eat with your lunch do you:	How many days a week do you bring vegetables to eat with your lunch?	If you bring vegetables to eat with your lunch do you:	During snack time, how many days a week do you have a fruit or a vegetable as a snack?	Would you like to be able to choose your own healthy snack during lunch?	Do you think fruits and vegetables are good for you?	Which do you like more, fruits or vegetables?	Please check on ALL of the fruits you like:	Please check on ALL of the vegetables you like:	How old are you?	I am a:
1/21/2016 11:16:49	3 days		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	3 days	Yes	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries, Cantaloupe, Pineapple, Peach, Watermelon	Green beans	8 years old	Girl
1/21/2016 11:17:54	3 days		usually take home my remaining fruits	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	3 days	Yes	Yes	Fruits	Orange, Banana, Grapes, Strawberries, Peach, Watermelon	Green beans	7 years old	Boy
1/21/2016 11:18:02	5 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	Yes	Yes	I like both fruit and vegetables the same	celery	Salad	8 years old	Boy
1/21/2016 11:18:	2 days		usually take home	2 days	throw out my remain	2 days	No	Yes	Fruits	Orange, Banana, Grapes,	Spinach	7 years	Boy

11			my remaining fruits		ing vegetables					Strawberries, Pear, Honeydew melon		old	
1/21/2016 11:18:33	3 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon, Kiwi	Tomatoes	7 years old	Girl
1/21/2016 11:18:38	4 days		throw out my remaining fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	I do not know	I do not know	Fruits	Apple, Orange, Grapes, Strawberries, Pineapple, Plum, Peach, Watermelon	Spinach	8 years old	Boy
1/21/2016 11:18:45	2 days		usually finish all of my fruit	1 day	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Orange, Banana, Cherry, Strawberries, Blueberries, Pineapple, Pear, Plum, Peach	Carrots	7 years old	Girl
1/21/2016 11:18:45	0 days (I do not		usually take home my remai	0 days (I do not bring vegeta	usually take home my remain	I do not bring fruits or	I do not know	Yes	I do not like fruits or vegetab	I do not like any of these fruit	Edamame (soybeans)	7 years old	Boy

	bring fruit with my lunch)		ning fruits	bles with my lunch)	ing vegetables	vegetables to eat during snack time.			les				
1/21/2016 11:19:36	1 day		usually finish all of my fruit	3 days	usually finish all of my vegetables	2 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Grapes, Strawberries, Cantaloupe, Pineapple, Pear, Peach, Watermelon	Edamame (soybeans)	8 years old	Girl
1/21/2016 11:19:59	0 days (I do not bring fruit with my lunch)		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	usually finish all of my vegetables	I do not bring fruits or vegetables to eat during snack time.	Yes	Yes	Fruits	Apple, Banana, Strawberries	Broccoli	7 years old	Boy
1/21/2016 11:20:01	5 days		usually finish all of my fruit	2 days	throw out my remaining vegetables	2 days	Yes	Yes	Fruits	Apple, Orange, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon	Cucumber	7 years old	Girl
1/21/2016 11:20:	3 days		usually finish	1 day	usually take home	1 day	I do not kno	Yes	Fruits	Apple, Grapes, Strawbe	Carrots	7 years	Girl

28			all of my fruit		my remaining vegetables		w			rries, Blueberries, Pear, Watermelon		old	
1/21/2016 11:20:30	1 day		throw out my remaining fruit	1 day	usually take home my remaining vegetables	I do not bring fruits or vegetables to eat during snack time.	I do not know	Yes	Fruits	Apple, Banana, Strawberries, Pineapple, Peach, Watermelon, Kiwi	Carrots	8 years old	Girl
1/21/2016 11:20:55	0 days (I do not bring fruit with my lunch)		I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	Yes	Yes	Fruits	Apple, Orange, Cherry, Grapes, Strawberries, Pear, Watermelon	Broccoli	8 years old	Boy
1/21/2016 11:21:11	5 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Peach, Watermelon	Celery	8 years old	Girl
1/21/2016 11:21:38	5 days		usually take home my remaining fruits	5 days	usually take home my remaining vegetables	4 days	Yes	Yes	Fruits	Apple, Grapes, Strawberries, Blueberries, Cantaloupe, Pineappl	Carrots	7 years old	Girl

										e, Peach, Watermelon, Honeydew melon			
1/21/2016 11:21:56	2 days		usually take home my remaining fruits	2 days	usually take home my remaining vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Pineapple, Pear, Peach, Watermelon, Kiwi, pomagrenale	Carrots	7 years old	Boy
1/21/2016 11:22:01	1 day		usually take home my remaining fruits	1 day	usually take home my remaining vegetables	1 day	Yes	Yes	I like both fruit and vegetables the same	Orange, Banana, Cherry, Grapes, Strawberries, Pineapple, Pear, Plum, Peach, Watermelon, Kiwi	corn	7 years old	Girl
1/21/2016 11:23:35	5 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeyd	corn	8 years old	Girl

										ew melon, Kiwi			
1/21/2016 11:23:38	1 day		usually take home my remaining fruits	1 day	usually take home my remaining vegetables	1 day	Yes	Yes	I like both fruit and vegetables the same	Orange, Banana, Cherry, Grapes, Strawberries, Pineapple, Pear, Plum, Peach, Watermelon, Kiwi	corn	7 years old	Girl
1/21/2016 11:23:41	5 days		usually finish all of my fruit	3 days	usually finish all of my vegetables	5 days	I do not know	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon	Asparagus	7 years old	Boy
1/22/2016 12:51:21	4 days		usually take home my remaining fruits	2 days	usually finish all of my vegetables	3 days	Yes	Yes	Fruits	Grapes, Strawberries, Watermelon	Cucumber, Carrots, Salad	7 years old	Boy
1/22/2016 12:52:18	3 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Pineapple, Pear,	Tomatoes, Broccoli, Carrots, Peppers, Celery, Green beans, Salad	8 years old	Girl

										Plum, Peach, Watermelon, Kiwi, tanderee n			
1/22/2016 12:54:24	3 days		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	throw out my remaining vegetables	I do not bring fruits or vegetables to eat during snack time.	I do not know	Yes	Fruits	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Cantaloupe, Pineapple, Pear, Plum, Watermelon	Tomatoes, Carrots, Celery, Spinach, Salad	8 years old	Boy
1/22/2016 12:54:49	3 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Pineapple, Pear, Plum, Peach, Watermelon, Kiwi, tanderee n	Tomatoes, Broccoli, Carrots, Peppers, Celery, Green beans, Salad	8 years old	Girl
1/22/2016 12:54:51	5 days		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	5 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Peach, Waterm	Cucumber, Broccoli, Carrots, Celery, Green beans, Salad	8 years old	Boy

										elon, Kiwi			
1/22/2016 12:55:13	3 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Pineapple, Pear, Plum, Peach, Watermelon, Kiwi, tanderee n	Tomatoes, Broccoli, Carrots, Peppers, Celery, Green beans, Salad	8 years old	Girl
1/22/2016 12:55:53	0 days (I do not bring fruit with my lunch)		I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	Yes	Yes	Fruits	Apple, Cantaloupe, Pineapple, Pear, Watermelon	none	8 years old	Boy
1/22/2016 12:56:03	5 days		usually finish all of my fruit	5 days	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Pineapple, Peach, Watermelon	Cucumber, Tomatoes, Broccoli, Carrots, Peppers, Green beans, Salad	7 years old	Girl
1/22/2016 12:56:14	0 days (I do not bring fruit with		I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my	5 days	Yes	Yes	Fruits	Apple, Orange, Grapes, Strawberries, Watermelon	Carrots, Peppers, Celery	7 years old	Boy

	my lunch)				lunch								
1/22/2016 12:56:35	4 days		usually take home my remaining fruits	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	2 days	Yes	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries, Pineapple, Waterm elon, Kiwi, mango	Cucumber, Carrots, Celery, Salad, blackberries	7 years old	Girl
1/22/2016 12:56:59	3 days		throw out my remaining fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	1 day	Yes	Yes	Fruits	Apple, Banana, Cherry, Grapes, Strawberries, Blueberries, Plum, Peach, Waterm elon	Cucumber, Broccoli, Carrots	7 years old	Boy
1/22/2016 12:57:10	2 days		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	2 days	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Waterm elon, Kiwi	Cucumber, Broccoli, Carrots, Celery, Green beans, Spinach, Salad	7 years old	Girl
1/22/2016 12:57:35	2 days		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	usually finish all of my vegetables	1 day	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Grapes, Strawberries, Blueberries, Pineapple,	Cucumber, Tomatoes, Broccoli, Carrots, Peppers,	8 years old	Girl

										e, Pear, Peach, Waterm elon, lemon	Celery, Spinach , Cauliflo wer, Salad		
1/22/2016 12:58:06	5 days		usuall y finish all of my fruit	5 days	usuall y finish all of my vegeta bles	5 days	Yes	Yes	I like both fruit and vegetab les the same	Apple, Orange, Banana, Cherry, Grapes, Strawbe rries, Blueberr ies, Cantalo upe, Pineappl e, Pear, Plum, Peach, Waterm elon, Honeyd ew melon, Kiwi, avacado	Cucumb er, Tomato es, Broccol i, Carrots, Peppers , Celery, Green beans, Spinach , Kale, Asparag us, Cauliflo wer, Eggplan t, Salad, Edama me (soybea ns)	8 yea rs old	Gi rl
1/22/2016 12:59:19	2 days		usuall y take home my remai ning fruits	1 day	usuall y finish all of my vegeta bles	3 days	Yes	Yes	I like both fruit and vegetab les the same	Apple, Banana, Grapes, Strawbe rries, Blueberr ies, Cantalo upe, Peach, Waterm elon, Honeyd ew melon	Cucumb er, Broccol i, Carrots, Celery, Green beans, Salad	7 yea rs old	Gi rl
1/22/2016 12:59:31	0 days (I do not brin g fruit with		I do not bring any fruits to eat with my lunch	0 days (I do not bring vegeta bles with my lunch)	I do not bring any vegeta bles to eat with my	5 days	Yes	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawbe rries, Blueberr ies, Cantalo	Broccol i, Carrots, Green beans, Cauliflo wer, corn peas	7 yea rs old	Gi rl

	my lunch)				lunch					upe, Pineapple, Peach, Watermelon, Kiwi, mango blackberries rasberries			
1/22/2016 12:59:34	2 days		usually finish all of my fruit	2 days	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Grapes, Strawberries, Cantaloupe, Peach, Watermelon	Cucumber, Broccoli, Carrots, Celery, Green beans, Asparagus	7 years old	Girl
1/22/2016 12:59:46	1 day		usually finish all of my fruit	2 days	usually finish all of my vegetables	2 days	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon, Kiwi	Cucumber, Tomatoes, Broccoli, Carrots, Peppers, Celery, Green beans, Spinach, Kale, Asparagus, Cauliflower, Eggplant, Salad, Edamame (soybeans)	7 years old	Girl
1/22/2016 12:59:55	5 days		usually finish all of my fruit	0 days (I do not bring vegetables with my	I do not bring any vegetables to eat with	5 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberr	Cucumber, Tomatoes, Broccoli, Carrots, Celery,	8 years old	Boy

				lunch)	my lunch					ies, Cantaloupe, Pineapple, Pear, Peach, Kiwi	Green beans, Cauliflower, Salad		
1/22/2016 13:00:10	3 days		usually finish all of my fruit	2 days	usually finish all of my vegetables	2 days	Yes	Yes	I like both fruit and vegetables the same	Orange, Banana, Cherry, Grapes, Blueberries, Cantaloupe, Pear, Watermelon, Honeydew melon, pomagranate	Cucumber, Spinach, Asparagus, Salad	7 years old	Boy
1/22/2016 13:01:03	3 days		usually finish all of my fruit	2 days	usually finish all of my vegetables	5 days	I do not know	Yes	Fruits	Apple, Cherry	Green beans, Edamame (soybeans)	8 years old	Girl
1/22/2016 13:01:23	3 days		usually finish all of my fruit	2 days	usually finish all of my vegetables	5 days	I do not know	Yes	Fruits	Apple, Cherry	Green beans, Edamame (soybeans)	8 years old	Girl
1/22/2016 13:02:12	3 days		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	I do not know	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries	Broccoli, Carrots, Cauliflower, Salad	7 years old	Boy
1/22/2016 13:02:20	2 days		usually take home my remaining	0 days (I do not bring vegetables	usually finish all of my vegeta	4 days	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry, Grapes, Strawbe	Carrots	8 years old	Girl

			fruits	with my lunch)	bles					rries, Cantaloupe, Pineapple, Pear, Peach, Watermelon, Honeydew melon, Kiwi, green apples			
1/22/2016 13:03:47	1 day		usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	1 day	Yes	Yes	Fruits	Apple, Orange, Cherry, Strawberries, Watermelon	Cucumber, Carrots, Celery	7 years old	Girl

Control Group

Timestamp	How many days a week do you bring fruit to eat with your lunch?	If you bring fruit to eat with your lunch do you:	How many days a week do you bring vegetables to eat with your lunch?	If you bring vegetables to eat with your lunch do you:	During snack time, how many days a week do you have a fruit or a vegetable as a snack?	Would you like to be able to choose your own healthy snack during lunch?	Do you think fruits and vegetables are good for you?	Which do you like more, fruits or vegetables?	Please check on ALL of the fruits you like:	Please check on ALL of the vegetables you like:	How old are you?
1/21/2016 12:51:43	5 days	I do not bring any fruits to eat with my lunch	5 days	I do not bring any vegetables to eat with my lunch	1 day	I do not know	Yes	Fruits	Apple, Orange, Grapes, Strawberries, Pear	Broccoli, Carrots	7 years old
1/21/2016 12:53:2	0 days (I do	usually take home	0 days (I do not	usually take home	I do not bring fruits or	Yes	Yes	Fruits	Apple, Banana, Grapes,	Cucumber, Carrots	8 years

3	not bring fruit with my lunch)	my remaining fruits	bring vegetables with my lunch)	my remaining vegetables	vegetables to eat during snack time.				Strawberries, Cantaloupe, Pineapple, Watermelon		old
1/21/2016 12:53:46	5 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	1 day	I do not know	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries, Pineapple, Pear, Peach, Watermelon, Kiwi	Cucumber, Tomatoes, Broccoli, Carrots, Peppers, Celery, Spinach	7 years old
1/21/2016 12:54:45	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	Yes	Yes	Vegetables	Strawberries, Watermelon	Broccoli, peas, corn	7 years old
1/21/2016 12:55:21	4 days	usually finish all of my fruit	4 days	usually finish all of my vegetables	4 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Cherry, Grapes, Strawberries, Pineapple, Watermelon	Salad, sweet peppers	7 years old
1/21/2016 12:56:34	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	Yes	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries, Cantaloupe, Pineapple, Pear, Plum, Watermelon	Broccoli, Carrots, Cauliflower, Eggplant	7 years old
1/21/2016 12:57:04	0 days (I do not bring	I do not bring any fruits to eat with	0 days (I do not bring vegetables with	usually finish all of my vegetables	5 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Banana, Cherry, Grapes, Strawberries,	Cucumber, Tomatoes, Broccoli, Carrots,	7 years old

	fruit with my lunch)	my lunch	my lunch)						Blueberries, Pear, Watermelon, frozen banna	Celery, Green beans, Asparagus, Salad, Edamame (soybeans)	
1/21/2016 12:57:40	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	usually finish all of my vegetables	5 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Banana, Cherry, Grapes, Strawberries, Blueberries, Pear, Watermelon, frozen banna	Cucumber, Tomatoes, Broccoli, Carrots, Celery, Green beans, Asparagus, Salad, Edamame (soybeans)	7 years old
1/21/2016 12:58:32	5 days	usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Plum, Peach, Watermelon	Cucumber, Tomatoes, Broccoli, Carrots, Celery, Green beans, Spinach, Salad	8 years old
1/21/2016 12:58:34	5 days	usually take home my remaining fruits	0 days (I do not bring vegetables with my lunch)	usually take home my remaining vegetables	4 days	I do not know	Yes	Fruits	Apple, Orange, Grapes, Strawberries, Cantaloupe, Watermelon	Cucumber, Carrots, Celery	8 years old
1/21/2016 12:59:07	0 days (I do not bring fruit	I do not bring any fruits to eat with my	0 days (I do not bring vegetables with my	I do not bring any vegetables to eat with my	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries,	Carrots, Green beans	8 years old

	with my lunch)	lunch	lunch)	lunch					Cantaloupe, Peach, Watermelon		
1/21/2016 12:59:24	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	3 days	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Pineapple, Pear, Peach, Watermelon, Kiwi	Cucumber, Carrots	8 years old
1/21/2016 12:59:25	3 days	usually take home my remaining fruits	4 days	usually finish all of my vegetables	5 days	I do not know	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Pineapple, Pear, Peach, Watermelon, Kiwi, lemanade	Cucumber, Tomatoes, Broccoli, Carrots, Peppers, Green beans, Kale, Eggplant, Salad	8 years old
1/21/2016 13:00:44	5 days	throw out my remaining fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	5 days	I do not know	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries, Plum, Peach, Watermelon, Kiwi	Cucumber, Tomatoes, Broccoli, Carrots, Celery, Spinach, Kale, Cauliflower, Salad, Edamame (soybeans)	7 years old
1/21/2016 13:01:57	2 days	usually finish all of my fruit	1 day	usually finish all of my vegetab	2 days	Yes	Yes	I like both fruit and vegetables the	Apple, Orange, Banana, Cherry, Grapes,	Cucumber, Tomatoes, Broccoli,	8 years old

				les				same	Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon, Kiwi	Carrots, Peppers, Celery, Green beans, Spinach, Kale, Asparagus, Cauliflower, Salad, Edamame (soybeans), olive	
1/21/2016 13:02:57	5 days	usually finish all of my fruit	4 days	usually finish all of my vegetables	5 days	Yes	Yes	Fruits	Orange, Cherry, Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon, figs	Cucumber, Tomatoes, Carrots, Peppers, Celery, Green beans, Cauliflower, Salad	8 years old
1/21/2016 13:03:02	4 days	I do not bring any fruits to eat with my lunch	3 days	throw out my remaining vegetables	1 day	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Strawberries, Blueberries, Watermelon	Tomatoes, Broccoli, Spinach	7 years old
1/21/2016 13:03:04	3 days	usually take home my remaining fruits	0 days (I do not bring vegetables with my lunch)	usually finish all of my vegetables	1 day	Yes	Yes	I like both fruit and vegetables the same	Banana, tangerin	Cucumber, Spinach	7 years old
1/22/2016 11:26:2	5 days	usually finish all of	2 days	usually finish all of	5 days	I do not know	Yes	I like both fruit and	Apple, Orange, Banana,	Broccoli, Carrots, Celery,	8 years

6		my fruit		my vegetables				vegetables the same	Cherry, Grapes, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon	Green beans, Spinach, Eggplant, Salad	old
1/22/2016 11:26:51	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	Yes	Yes	Fruits	Apple, Orange, Banana, Grapes, Pineapple, Pear, Peach, Watermelon, melon	Carrots, Green beans, potato	7 years old
1/22/2016 11:27:17	1 day	usually take home my remaining fruits	0 days (I do not bring vegetables with my lunch)	throw out my remaining vegetables	1 day	Yes	Yes	Fruits	Apple, Grapes, carest	nothing	7 years old
1/22/2016 11:27:25	3 days	usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	5 days	Yes	Yes	Fruits	Apple, Orange, Grapes, Strawberries, Pear, Watermelon, Kiwi	Carrots, Salad	7 years old
1/22/2016 11:27:38	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	4 days	usually take home my remaining vegetables	2 days	Yes	Yes	Vegetables	I do not like any of these fruit	Broccoli, Carrots, Asparagus, Edamame (soybeans)	7 years old
1/22/2016 11:27:59	3 days	usually finish all of my fruit	2 days	usually take home my remaining	5 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberr	Cucumber, Tomatoes, Broccoli, Carrots,	7 years old

				vegetables					ies, Blueberries, Pineapple, Pear, Plum, Peach, Watermelon	Peppers, Celery, Green beans, Eggplant, Salad	
1/22/2016 11:28:03	0 days (I do not bring fruit with my lunch)	usually take home my remaining fruits	1 day	usually finish all of my vegetables	1 day	Yes	Yes	Fruits	Strawberries	Tomatoes	8 years old
1/22/2016 11:28:15	0 days (I do not bring fruit with my lunch)	usually take home my remaining fruits	0 days (I do not bring vegetables with my lunch)	usually take home my remaining vegetables	I do not bring fruits or vegetables to eat during snack time.	I do not know	Yes	Fruits	Apple, Orange, Cherry, Grapes, Strawberries, Blueberries, Peach, Watermelon	Cucumber, Tomatoes, Carrots	7 years old
1/22/2016 11:28:25	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	I do not know	Yes	Fruits	Apple, Orange, Banana	Carrots	7 years old
1/22/2016 11:29:07	1 day	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	3 days	I do not know	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries, watermelon	corn	8 years old
1/22/2016 11:29:13	0 days (I do not	I do not bring any fruits to	0 days (I do not bring	I do not bring any vegetab	I do not bring fruits or vegetab	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry,	Tomatoes, Salad	7 years old

	bring fruit with my lunch)	eat with my lunch	vegetables with my lunch)	les to eat with my lunch	les to eat during snack time.				Grapes, Strawberries, Blueberries, Pineapple, Pear, Plum, Peach, Kiwi		
1/22/2016 11:29:54	5 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	5 days	No	Yes	Fruits	Apple, Orange, Banana, Strawberries, Pear, Watermelon	none	7 years old
1/22/2016 11:30:00	5 days	usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	usually finish all of my vegetables	5 days	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry, Grapes	corn	8 years old
1/22/2016 11:30:31	1 day	usually finish all of my fruit	2 days	usually finish all of my vegetables	3 days	Yes	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries, Blueberries, Pineapple, Watermelon	Broccoli, Carrots, Salad	7 years old
1/22/2016 11:30:39	3 days	usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	4 days	I do not know	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Grapes, Strawberries, Blueberries, Pear, Plum, Peach, Watermelon, Kiwi, rasbareys	Cucumber, Broccoli, Carrots	8 years old
1/22/2016 11:31:59	5 days	usually finish all of my	4 days	usually finish all of my	5 days	Yes	Yes	Fruits	Apple, Orange, Banana, Cherry,	Cucumber, Tomatoes,	8 years old

		fruit		vegetables					Grapes, Strawberries, Blueberries, Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon, Kiwi	Broccoli, Carrots, Peppers, Celery, Asparagus, Cauliflower, Salad	
1/22/2016 11:32:11	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	No	Yes	Fruits	Apple, Banana, Grapes	Broccoli	7 years old
1/22/2016 11:32:37	1 day	usually take home my remaining fruits	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	3 days	I do not know	Yes	Fruits	Apple, Orange, Cherry, Grapes, Strawberries	Broccoli, Carrots, Celery	7 years old
1/22/2016 11:36:40	2 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	5 days	Yes	Yes	Fruits	Apple, Orange, Banana, Grapes, Strawberries, Blueberries, Pineapple, Peach	Broccoli, Carrots, Salad	7 years old
1/22/2016 12:48:47	2 days	usually finish all of my fruit	2 days	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Grapes, Strawberries, Blueberries,	Cucumber, Tomatoes, Broccoli, Carrots, Peppers, Celery, Green	8 years old

									Cantaloupe, Pineapple, Pear, Plum, Peach, Watermelon, Honeydew melon, Kiwi	beans, Spinach, Kale, Asparagus, Cauliflower, Eggplant, Salad, Edamame (soybeans)	
1/22/2016 12:52:39	4 days	usually finish all of my fruit	4 days	usually finish all of my vegetables	3 days	Yes	Yes	I like both fruit and vegetables the same	Apple, Orange, Banana, Cherry, Strawberries, Blueberries, Pineapple, Peach, Watermelon, Kiwi	Tomatoes, Broccoli, Carrots, Peppers, Celery, Green beans, Spinach, Salad	7 years old
1/22/2016 12:59:23	5 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	4 days	Yes	Yes	Fruits	Orange, Cherry, Grapes, Strawberries, Peach, Watermelon, Honeydew melon, clementines	Broccoli, pumkin	8 years old
1/22/2016 13:10:41	3 days	usually take home my remaining fruits	3 days	usually finish all of my vegetables	5 days	Yes	Yes	I like both fruit and vegetables the same	Cherry, Strawberries, Blueberries, Cantaloupe, Peach, Watermelon, Kiwi	Cucumber, Tomatoes, Carrots	7 years old
1/22/2016 14:09:51	4 days	usually finish all of my fruit	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	3 days	Yes	Yes	Fruits	Apple, Banana, Grapes, Strawberries, Pear, Peach, Watermelon, melon	Cucumber, Tomatoes, Carrots, Celery, Asparagus	7 years old

1/27/2016 13:36:45	0 days (I do not bring fruit with my lunch)	I do not bring any fruits to eat with my lunch	0 days (I do not bring vegetables with my lunch)	I do not bring any vegetables to eat with my lunch	I do not bring fruits or vegetables to eat during snack time.	I do not know	Yes	I do not like fruits or vegetables	Apple	Carrots	8 years old

Appendix H: Post-assessment Survey

Post-assessment Participant Questionnaire

Directions: Please answer all of the questions to the best of your ability. Thank you for taking the time to answer the questions!

1. How many days a week do you bring fruit to eat with your lunch?
    a. 0 (no) days
    b. 1 day
    c. 2 days
    d. 3 days
    e. 4 days
    f. 5 days

2. If you bring fruit to eat with your lunch do you:
    a. usually finish all of my fruit
    b. usually take home my fruits that I do not finish
    c. I usually throw out my remaining fruit
    d. I do not bring any fruits to eat with my lunch

3. How many days a week do you bring vegetables to eat with your lunch?
    a. 0 (no) days
    b. 1 day
    c. 2 days
    d. 3 days
    e. 4 days
    f. 5 days

4. If you bring vegetables to eat with your lunch do you:
    a. usually finish all of my vegetables
    b. usually take home my vegetables that I do not finish
    c. I usually throw out my remaining vegetables
    d. I do not bring any vegetables to eat with my lunch

5. During snack time, how many times a week do you have a fruit or a vegetable as a snack?
    a. 1 day
    b. 2 days
    c. 3 days
    d. 4 days
    e. 5 days
    f. I never bring fruits or vegetables to eat during snack time

6. How many different fruits did you try during fruit and vegetable days? (A new fruit would be a fruit you never had before).
    a. 0, I did not try any new fruits
    b. I tried 1 new fruit
    c. I tried 2 new fruits
    d. I tried 3 new fruits
    e. I tried 5 or more new fruits

7. How many different vegetables did you try during fruit and vegetable days? (A new vegetable would be a vegetable you never had before).
    a. 0, I did not try any new vegetables
    b. I tried 1 new vegetable
    c. I tried 2 new vegetables
    d. I tried 3 new vegetables
    e. I tried 5 or more new vegetables

8. Did you like to choose your own healthy snack during lunch?
    a. Yes
    b. No
    c. I don't know

9. Do you think fruits and vegetables are good for you?
    a. Yes
    b. No
    c. I don't know

10. Which do you like more, fruits or vegetables?
    a. Fruits
    b. Vegetables
    c. I like them both the same
    d. I do not like fruits or vegetables

11. Now that fruit and vegetable day is over, do you want to eat more fruit and vegetables in school and at home?
    a. Yes
    b. No
    c. I do not know

12. How old are you?
    a. 6 years old
    b. 7 years old
    c. 8 years old

13. Are you a:
    a. boy
    b. girl

Thank you!

Appendix I: Post-assessment Results

Experimental Group

Timestamp	How many days a week do you bring fruit to eat with your lunch?	If you bring fruit to eat with your lunch do you:	How many days a week do you bring vegetables to eat with your lunch?	If you bring vegetables to eat with your lunch do you:	During snack time, how many times a week do you have a fruit or a vegetable as a snack?	How many different fruits did you try during fruit and vegetable days? (A new fruit would be a fruit you never had before).	How many different vegetables did you try during fruit and vegetable days? (A new vegetable would be a vegetable you never had before).	Did you like to choose your own healthy snack during lunch?	Do you think fruits and vegetables are good for you?	Which do you like more, fruits or vegetables?	Now that fruit and vegetable day is over, do you want to eat more fruit and vegetables in school and at home?	How old are you?	Are you a:
4/5/2016 12:55:40	2 days	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	2 days	I tried 4 new fruits	I tried 3 new vegetables	No	Yes	Fruits	No	7 years old	boy
4/5/2016 12:56:39	3 days	usually finish all of my fruit	2 days	usually finish all of my vegetables	1 day	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	7 years old	girl
4/5/2016 12:57:15	1 day	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	1 day	I tried 3 new fruits	0, I did not try any new vegetables	Yes	Yes	Fruits	Yes	8 years old	girl

4/5/2016 12:57:20	3 days	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	4 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	boy
4/5/2016 12:57:32	1 day	I usually throw out my remaining fruit	1 day	I usually throw out my remaining vegetables	1 day	I tried 2 new fruits	I tried 2 new vegetbales	I don't know	Yes	Fruits	No	8 years old	boy
4/5/2016 12:57:52	1 day	usually finish all of my fruit	1 day	usually take home my vegetables that I do not finish	3 days	I tried 2 new fruits	I tried 1 new vegetable	I don't know	Yes	Fruits	I don't know	8 years old	girl
4/5/2016 12:58:00	0 (no) days	I do not bring any fruits to eat with my lunch	0 (no) days	I do not bring any vegetables to eat with my lunch	3 days	I tried 3 new fruits	I tried 3 new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/5/2016 12:58:47	1 day	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	2 days	I tried 1 new fruit	0, I did not try any new vegetables	Yes	Yes	Fruits	I don't know	8 years old	boy
4/5/2016 12:59:25	3 days	usually finish all of my fruit	1 day	usually take home my vegetables that I	3 days	I tried 5 or more new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	Yes	8 years old	boy

				do not finish									
4/5/2016 13:00:45	2 days	usually take home my fruits that I do not finish	2 days	usually take home my vegetables that I do not finish	2 days	I tried 1 new fruit	I tried 1 new vegetable	Yes	Yes	I like them both the same	Yes	8 years old	boy
4/5/2016 13:00:46	4 days	usually take home my fruits that I do not finish	3 days	usually finish all of my vegetables	3 days	I tried 3 new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	Yes	7 years old	boy
4/5/2016 13:01:39	0 (no) days	I do not bring any fruits to eat with my lunch	2 days	usually finish all of my vegetables	5 days	I tried 2 new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	Yes	7 years old	girl
4/5/2016 13:02:12	2 days	usually finish all of my fruit	2 days	usually finish all of my vegetables	2 days	I tried 4 new fruits	I tried 1 new vegetable	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/5/2016 13:03:08	4 days	usually finish all of my fruit	4 days	usually finish all of my vegetables	4 days	I tried 4 new fruits	I tried 4 new vegetables	Yes	Yes	I like them both the same	Yes	7 years old	girl
4/5/2016 13:03:45	5 days	usually finish all of my fruit	4 days	usually finish all of my vegetables	5 days	I tried 5 or more new fruits	I tried 4 new vegetables	No	Yes	I like them both the same	Yes	7 years old	girl
4/5/2016 13:04:39	4 days	usually finish all of my fruit	2 days	I do not bring any vegetables to eat	1 day	I tried 3 new fruits	I tried 2 new vegetbales	Yes	Yes	Fruits	I don't know	8 years old	boy

				with my lunch									
4/5/2016 13:04:56	1 day	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	1 day	I tried 5 or more new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	Yes	8 years old	girl
4/5/2016 13:05:09	5 days	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	5 days	I tried 2 new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	Yes	7 years old	girl
4/5/2016 13:06:12	3 days	usually finish all of my fruit	2 days	usually finish all of my vegetables	3 days	I tried 3 new fruits	I tried 2 new vegetbales	Yes	Yes	Fruits	Yes	8 years old	girl
4/5/2016 13:06:32	0 (no) days	I do not bring any fruits to eat with my lunch	0 (no) days	I do not bring any vegetables to eat with my lunch	5 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes		I like them both the same	Yes	8 years old	boy
4/5/2016 13:08:22	3 days	usually finish all of my fruit	3 days	usually finish all of my vegetables	2 days	I tried 2 new fruits	I tried 1 new vegetable	Yes	Yes	I like them both the same	Yes	7 years old	girl
4/5/2016 13:09:40	1 day	usually finish all of my fruit	5 days	usually finish all of my vegetables	2 days	I tried 3 new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	Yes	7 years old	girl
4/7/2016	5 days	usually	5 days	usually finish	5 days	I tried 5 or	I tried 5 or	Yes	Yes	I like them	Yes	8 yea	boy

12:49:34		finish all of my fruit		all of my vegetables		more new fruits	more new vegetables			both the same		rs old	
4/7/2016 12:50:11	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	I tried 1 new fruit	0, I did not try any new vegetables	Yes	Yes	I like them both the same	Yes	7 years old	boy
4/7/2016 12:53:19	5 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	5 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/7/2016 12:53:32	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	3 days	I tried 3 new fruits	I tried 3 new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/7/2016 12:53:37	0 (no) days	usually finish all of my fruit	0 (no) days	usually finish all of my vegetables	I never bring fruits or vegetables to eat during snack time	I tried 5 or more new fruits	I tried 1 new vegetable	Yes	Yes	Vegetables	Yes	8 years old	boy
4/7/2016 12:53:59	4 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	1 day	I tried 3 new fruits	I tried 1 new vegetable	Yes	Yes	Fruits	Yes	7 years old	girl
4/7/2016 12:54:29	5 days	usually take home my fruits that I do not finish	5 days	usually take home my vegetables that I do not finish	3 days	I tried 1 new fruit	I tried 2 new vegetbales	Yes	Yes	I like them both the same	Yes	8 years old	boy
4/7/2016 12:54:42	5 days	usually finish all of my fruit	1 day	usually take home my vegetables	1 day	0, I did not try any new fruits	0, I did not try any new vegetables	No	Yes	I like them both the same	Yes	8 years old	boy

				that I do not finish									
4/7/2016 12:55:36	2 days	usually finish all of my fruit	0 (no) days	usually finish all of my vegetables	2 days	I tried 1 new fruit	0, I did not try any new vegetables	Yes	Yes	Fruits	Yes	7 years old	girl
4/7/2016 12:55:46	5 days	usually finish all of my fruit	3 days	usually take home my vegetables that I do not finish	5 days	I tried 2 new fruits	I tried 4 new vegetables	I don't know	Yes	Fruits	Yes	7 years old	girl
4/7/2016 12:56:02	5 days	usually finish all of my fruit	4 days	usually take home my vegetables that I do not finish	3 days	0, I did not try any new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	I don't know	7 years old	girl
4/7/2016 12:56:41	5 days	usually finish all of my fruit	2 days	usually finish all of my vegetables	4 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/7/2016 12:57:01	4 days	usually finish all of my fruit	2 days	usually finish all of my vegetables	2 days	I tried 2 new fruits	I tried 1 new vegetable	Yes	Yes	Fruits	Yes	7 years old	girl
4/7/2016 12:57:04	5 days	usually take home my fruits that I do not finish	5 days	usually take home my vegetables that I do not finish	4 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/7/2016 12:57:12	3 days	I usually throw out my	0 (no) days	I do not bring any vegeta	3 days	I tried 1 new fruit	0, I did not try any new vegeta	Yes	Yes	Fruits	I don't know	7 years old	girl

		remaining fruit		bles to eat with my lunch			bles						
4/7/2016 12:57:16	0 (no) days	I do not bring any fruits to eat with my lunch	0 (no) days	I do not bring any vegetables to eat with my lunch	I never bring fruits or vegetables to eat during snack time	I tried 1 new fruit	0, I did not try any new vegetables	Yes	Yes	Fruits	Yes	8 years old	boy
4/7/2016 12:58:05	3 days	usually take home my fruits that I do not finish	0 (no) days	I do not bring any vegetables to eat with my lunch	3 days	I tried 2 new fruits	I tried 1 new vegetable	Yes	Yes	Fruits	I don't know	8 years old	boy
4/7/2016 12:58:34	1 day	usually take home my fruits that I do not finish	1 day	usually take home my vegetables that I do not finish	5 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	7 years old	girl
4/7/2016 12:59:13	0 (no) days	I usually throw out my remaining fruit	0 (no) days	I usually throw out my remaining vegetables	I never bring fruits or vegetables to eat during snack time	I tried 1 new fruit	I tried 3 new vegetables	No	Yes	Vegetables	I don't know	8 years old	girl
4/7/2016 13:00:28	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/7/2016 13:01:08	5 days	usually finish all of	5 days	usually finish all of my	5 days	I tried 5 or more new	I tried 5 or more new	Yes	Yes	I like them both the same	Yes	8 years old	boy

		my fruit		vegeta bles		fruits	vegeta bles						
4/10/20 16 12:09:4 1	4 days	usuall y take home my fruits that I do not finish	3 days	usually take home my vegeta bles that I do not finish	4 days	I tried 3 new fruits	I tried 3 new vegeta bles	Yes	Yes	Fruits	Yes	8 yea rs old	gi rl
4/10/20 16 12:10:4 8	5 days	usuall y finish all of my fruit	3 days	usually take home my vegeta bles that I do not finish	4 days	I tried 2 new fruits	I tried 3 new vegeta bles	Yes	Yes	Fruits	Yes	8 yea rs old	bo y
4/10/20 16 12:11:5 2	3 days	usuall y finish all of my fruit	3 days	usually take home my vegeta bles that I do not finish	4 days	I tried 3 new fruits	I tried 4 new vegeta bles	Yes	Yes	I like them both the same	Yes	7 yea rs old	gi rl

Control Group

Timesta mp	Ho w man y days a wee k do you brin g fruit to eat with your lunc h?	If you brin g fruit to eat with your lunc h do you:	How many days a week do you bring vegeta bles to eat with your lunch?	If you bring vegeta bles to eat with your lunch do you:	During snack time, how many times a week do you have a fruit or a vegeta ble as a snack?	How many differe nt fruits did you try during fruit and vegeta ble days? (A new fruit would be a fruit you never had	How many differe nt vegeta bles did you try during fruit and vegeta ble days? (A new vegeta ble would be a vegeta ble you never had	Did you like to choo se your own healt hy snac k durin g lunc h?	Do you think fruits and vegeta bles are good for you?	Which do you like more, fruits or vegetab les?	Now that fruit and vegeta ble day is over, do you want to eat more fruit and vegeta bles in school and at home?	Ho w old are you ?	Ar e yo u a:

						before).	before) .						
4/6/2016 11:10:35	0 (no) days	usually take home my fruits that I do not finish	5 days	usually finish all of my vegetables	1 day	0, I did not try any new fruits	0, I did not try any new vegetables	Yes	Yes	Vegetables	Yes	6 years old	boy
4/6/2016 11:10:46	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	I like them both the same	Yes	7 years old	girl
4/6/2016 11:11:04	0 (no) days	I do not bring any fruits to eat with my lunch	0 (no) days	I do not bring any vegetables to eat with my lunch	I never bring fruits or vegetables to eat during snack time	I tried 1 new fruit	0, I did not try any new vegetables	Yes	Yes	Fruits	Yes	8 years old	boy
4/6/2016 11:11:44	5 days	usually finish all of my fruit	3 days	usually take home my vegetables that I do not finish	I never bring fruits or vegetables to eat during snack time	I tried 5 or more new fruits	I tried 2 new vegetbales	I don't know	Yes	Fruits	I don't know	7 years old	boy
4/6/2016 11:12:51	3 days	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	2 days	I tried 1 new fruit	0, I did not try any new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl

4/6/2016 11:12:53	4 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	3 days	I tried 5 or more new fruits	I tried 4 new vegetables	Yes	Yes	Fruits	Yes	8 years old	girl
4/6/2016 11:13:03	5 days	usually take home my fruits that I do not finish	5 days	usually take home my vegetables that I do not finish	5 days	0, I did not try any new fruits	0, I did not try any new vegetables	I don't know	Yes	I like them both the same	I don't know	8 years old	girl
4/6/2016 11:13:36	2 days	usually take home my fruits that I do not finish	5 days	usually finish all of my vegetables	I never bring fruits or vegetables to eat during snack time	I tried 2 new fruits	I tried 2 new vegetbales	I don't know	Yes	Fruits	I don't know	7 years old	boy
4/6/2016 11:13:39	1 day	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	2 days	I tried 2 new fruits	I tried 4 new vegetables	Yes	Yes	I like them both the same	Yes	7 years old	girl
4/6/2016 11:13:42	5 days	I do not bring any fruits to eat with my lunch	0 (no) days	I do not bring any vegetables to eat with my lunch	5 days	I tried 2 new fruits	I tried 2 new vegetbales	Yes	Yes	Fruits	Yes	8 years old	girl

4/6/2016 11:14:33	3 days	usually take home my fruits that I do not finish	1 day	usually finish all of my vegetables	5 days	I tried 3 new fruits	I tried 3 new vegetables	Yes	Yes	I like them both the same	I don't know	8 years old	girl
4/6/2016 11:14:34	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	3 days	I tried 5 or more new fruits	I tried 4 new vegetables	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/6/2016 11:14:41	0 (no) days	usually take home my fruits that I do not finish	1 day	usually take home my vegetables that I do not finish	1 day	I tried 2 new fruits	I tried 3 new vegetables	Yes	Yes	Fruits	Yes	8 years old	boy
4/6/2016 11:15:19	5 days	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	5 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	Fruits	Yes	8 years old	boy
4/6/2016 11:16:04	5 days	usually finish all of my fruit	5 days	I do not bring any vegetables to eat with my lunch	3 days	I tried 3 new fruits	I tried 1 new vegetable	Yes	Yes	I like them both the same	No	8 years old	boy
4/6/2016 11:16:1	0 (no) days	usually take	0 (no) days	I do not bring	I never bring fruits	I tried 4 new fruits	I tried 5 or more	Yes	Yes	I like them both the	I don't know	8 years	girl

8		home my fruits that I do not finish		any vegetables to eat with my lunch	or vegetables to eat during snack time		new vegetables			same		old	
4/6/2016 11:17:05	5 days	usually finish all of my fruit	2 days	usually finish all of my vegetables	3 days	I tried 2 new fruits	I tried 1 new vegetable	I don't know	Yes	Fruits	Yes	8 years old	girl
4/6/2016 11:17:25	5 days	usually finish all of my fruit	1 day	usually finish all of my vegetables	1 day	I tried 1 new fruit	I tried 1 new vegetable	Yes	Yes	I like them both the same	Yes	8 years old	girl
4/6/2016 11:17:27	5 days	usually finish all of my fruit	2 days	usually take home my vegetables that I do not finish	5 days	I tried 2 new fruits	I tried 2 new vegetbales	Yes	Yes	Fruits	Yes	8 years old	girl
4/6/2016 11:18:07	5 days	usually finish all of my fruit	4 days	usually finish all of my vegetables	5 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes		I like them both the same	Yes	8 years old	boy
4/6/2016 11:18:38	5 days	usually finish all of my fruit	4 days	usually take home my vegetables that I do not finish	5 days	I tried 4 new fruits	I tried 4 new vegetables	Yes	Yes	Fruits	Yes	8 years old	girl
4/8/2016 11:12:29	2 days	usually finish all of my	1 day	usually finish all of my vegetables	2 days	I tried 2 new fruits	0, I did not try any new vegetables	Yes	Yes	I like them both the same	Yes	7 years old	boy

		fruit											
4/8/2016 11:13:40	3 days	usually take home my fruits that I do not finish	0 (no) days	usually finish all of my vegetables	3 days	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	Fruits	No	8 years old	girl
4/8/2016 11:15:21	3 days	usually finish all of my fruit	4 days	usually finish all of my vegetables	2 days	I tried 2 new fruits	I tried 1 new vegetable	No	Yes	Fruits	Yes	8 years old	boy
4/8/2016 11:15:59	5 days	usually finish all of my fruit	0 (no) days	I do not bring any vegetables to eat with my lunch	5 days	0, I did not try any new fruits	0, I did not try any new vegetables	I don't know	Yes	Fruits	I don't know	7 years old	girl
4/8/2016 11:15:59	1 day	usually finish all of my fruit	3 days	usually take home my vegetables that I do not finish	1 day	I tried 3 new fruits	I tried 4 new vegetables	I don't know	Yes	Fruits	Yes	7 years old	boy
4/8/2016 11:16:30	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	I tried 1 new fruit	I tried 2 new vegetbales	I don't know	Yes	I like them both the same	I don't know	7 years old	boy
4/8/2016 11:16:31	0 (no) days	I do not bring any fruits to	0 (no) days	usually take home my vegetables that I	I never bring fruits or vegetables to eat	I tried 1 new fruit	0, I did not try any new vegetables	No	Yes	I do not like fruits or vegetables	No	8 years old	girl

		eat with my lunch		do not finish	during snack time								
4/8/2016 11:16:49	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	3 days	I tried 3 new fruits	I tried 2 new vegetbales	Yes	Yes	I like them both the same	Yes	8 years old	Girl
4/8/2016 11:17:10	1 day	usually take home my fruits that I do not finish	3 days	usually finish all of my vegetables	5 days	I tried 3 new fruits	I tried 1 new vegetable	Yes	Yes	Fruits	Yes	8 years old	Girl
4/8/2016 11:17:18	0 (no) days	I do not bring any fruits to eat with my lunch	0 (no) days	I do not bring any vegetables to eat with my lunch	I never bring fruits or vegetables to eat during snack time	I tried 5 or more new fruits	I tried 5 or more new vegetables	I don't know	Yes	Fruits	Yes	8 years old	Girl
4/8/2016 11:17:27	5 days	usually take home my fruits that I do not finish	0 (no) days	I do not bring any vegetables to eat with my lunch	5 days	I tried 5 or more new fruits	I tried 2 new vegetbales	Yes	Yes	I like them both the same	Yes	8 years old	Girl
4/8/2016 11:18:09	0 (no) days	I do not bring any fruit	0 (no) days	I do not bring any vegetables to	I never bring fruits or vegetables to	I tried 1 new fruit	I tried 1 new vegetable	Yes	Yes	Fruits	Yes	8 years old	Boy

		s to eat with my lunch		eat with my lunch	eat during snack time								
4/8/2016 11:18:16	1 day	usually take home my fruits that I do not finish	0 (no) days	I do not bring any vegetables to eat with my lunch	1 day	I tried 1 new fruit	0, I did not try any new vegetables	I don't know	I don't know	I like them both the same	I don't know	7 years old	boy
4/8/2016 11:18:49	0 (no) days	I do not bring any fruits to eat with my lunch	0 (no) days	I do not bring any vegetables to eat with my lunch	I never bring fruits or vegetables to eat during snack time	I tried 5 or more new fruits	I tried 5 or more new vegetables	Yes	Yes	Fruits	Yes	8 years old	girl
4/8/2016 11:18:49	2 days	usually take home my fruits that I do not finish	0 (no) days	I do not bring any vegetables to eat with my lunch	3 days	I tried 3 new fruits	0, I did not try any new vegetables	I don't know	Yes	Fruits	No	7 years old	boy
4/8/2016 11:18:52	2 days	usually finish all of my fruit	1 day	usually take home my vegetables that I do not finish	I never bring fruits or vegetables to eat during snack time	0, I did not try any new fruits	0, I did not try any new vegetables	Yes	Yes	Fruits	Yes	8 years old	girl
4/8/2016	0 (no)	I do not	4 days	usually finish	I never bring	0, I did	I tried 2 new	I don't	Yes	Vegetables	I don't know	7 yea	girl

11:18:57	days	bring any fruits to eat with my lunch		all of my vegetables	fruits or vegetables to eat during snack time	not try any new fruits	vegetbales	know				rs old	
4/8/2016 11:19:22	5 days	usually finish all of my fruit	5 days	usually finish all of my vegetables	5 days	0, I did not try any new fruits	0, I did not try any new vegetables	I don't know	I don't know	Fruits	I don't know	8 years old	girl
4/8/2016 11:19:23	5 days	usually take home my fruits that I do not finish	2 days	usually take home my vegetables that I do not finish	3 days	I tried 1 new fruit	I tried 1 new vegetable	Yes	Yes	Fruits	Yes	8 years old	boy
4/8/2016 11:20:37	4 days	usually finish all of my fruit	2 days	usually take home my vegetables that I do not finish	5 days	I tried 3 new fruits	I tried 2 new vegetbales	Yes	Yes	Fruits	Yes	8 years old	girl
4/8/2016 11:21:31	1 day	usually take home my fruits that I do not finish	1 day	I do not bring any vegetables to eat with my lunch	1 day	I tried 1 new fruit	I tried 1 new vegetable	I don't know	Yes	Fruits	No	7 years old	boy
4/8/2016 11:21:44	2 days	usually finish all	0 (no) days	I do not bring any	2 days	I tried 1 new fruit	I tried 5 or more new	Yes	Yes	Fruits	Yes	8 years old	Boy

		of my fruit		vegetables to eat with my lunch			vegetables						