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FARM TO SCHOOL: A CASE STUDY OF FOUR RURAL NEBRASKA SCHOOLS
BEFORE INITIATING LOCALLY GROWN FOODS IN SCHOOL FOOD SERVICE

by

Morgan E Swisher

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FARM TO SCHOOL: A CASE STUDY OF FOUR RURAL NEBRASKA SCHOOLS BEFORE INITIATING LOCALLY GROWN FOODS IN SCHOOL FOOD SERVICE

Morgan E. Swisher, M.S.

University of Nebraska, 2011

Adviser: Julie Albrecht

More than 25% of children in the U.S. are overweight. Farm to School is a program that encourages schools to procure local produce and nutrition education in an effort to improve childhood nutrition. A case study involving four schools has examined the attitudes of food service managers, food service staff members, and educators who are about to incorporate this program into their schools. Food service managers were interviewed about the foods they intend to purchase, food safety, menu planning, expected costs and receiving, additional training, and staff interest. From the qualitative study, the following themes were found: “More work for me,” “Unsure,” “Healthy changes,” “Choice,” “Nobody’s addressing the problem,” and “Worry about safety.” Supportive stakeholders also play an important part in the success of a Farm to School Program. Because of this, the attitudes of food service professionals and educators were also examined. A likert-scale survey was distributed to food service staff members (n= 49) and educators (n= 152) concerning cooking techniques, student food choices, classroom activities, and local support. Both surveys showed a positive correlation between age and score, but neither was statistically significant. The average score for the educators was 66.8 out of 85 (78.5%). The average score for the food service staff members was 61.1 out of 90 (67.9%). Support was noted as one of the most important factors for starting a Farm to School Program.

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Introduction

Childhood obesity has significantly increased since 1980. In 2004, 15.5% of children and adolescents were at or above the 95th percentile on the Centers for Disease Control growth charts, which classifies them as overweight. Within that, 10.9% were at or above the 97th percentile (Ogden, Carroll, & Flegal 2008; Viridis et al. 2009). Many factors influence the weight of a child. For example, if both of a child's parents are obese, that child has a 70% chance of becoming obese, and if only one parent is obese, that child still has a 50% chance of becoming obese (Viridis et al., 2009). Myers and Vargas (2000) distributed questionnaires to 200 parents with obese children. Over 35% of these parents did not think their child was obese, and 37% admitted they took no action to get their child to a healthy weight.

Schools are an environment where students eat 30-60% of their daily food intake. There may be a link between the National School Lunch/School Breakfast Programs (NSLP/SBP) and body mass index (BMI) in children and adolescents. Those who attend public school and qualify for NSLP/SBP have a 0.725 higher BMI than children who attend private school or who do not qualify for NSLP. Students who are eligible for NSLP and SBP have a 3.1% chance of becoming overweight by the third grade. Further, students who only qualify for NSLP have a 6.8% chance of becoming overweight by the third grade (Li, & Hooker, 2010; Millimet, Tchernis, & Husain, 2010). Not only are children and adolescents eating lunch at school, they are also eating snacks and beverages through vending machines or á la carte items from the school lunch program. Only 57%

of schools in the U.S. restrict when these foods can be sold, and 80% of schools still sell soft drinks (O'Toole, Anderson, Miller, & Guthrie, 2007).

This does not prove that school lunch is the cause of the problem (Story, Nanney, & Schwartz, 2009), as superintendents and food service managers will likely argue (Nollen et al. 2007). Problems several superintendents cited over the school lunch program were budgetary issues, school priorities (education being at the top of the list) and the fact that schools were unfairly targeted. Changing the school food environment may prove to be difficult.

Farm to School, a USDA program that encourages the intake local foods in schools, is trying to do just that. The Farm to School program is based on a “neoliberalization” concept (Allen, & Guthman, 2006; Sonnino, 2010), a concept that puts private interests ahead of public interests in an effort to become more efficient. While several programs have been successful, some programs, namely programs in California, fail to mention their success is due to generous donations and celebrity backing (Allen, & Guthman, 2006). Izumi, Rostant, Moss and Hamm (2006) found budget to be the biggest obstacle to implementing Farm to School; 279 Michigan food service managers responded by survey that they would only buy local foods if the price were competitive.

Hardesty (2008) examined price and availability factors preferred by food service managers of colleges and universities. Food service managers stressed the importance of year-round availability as well as obtaining the local foods from their primary vendor, two factors which correlated highly with one-another. Food service managers had rated

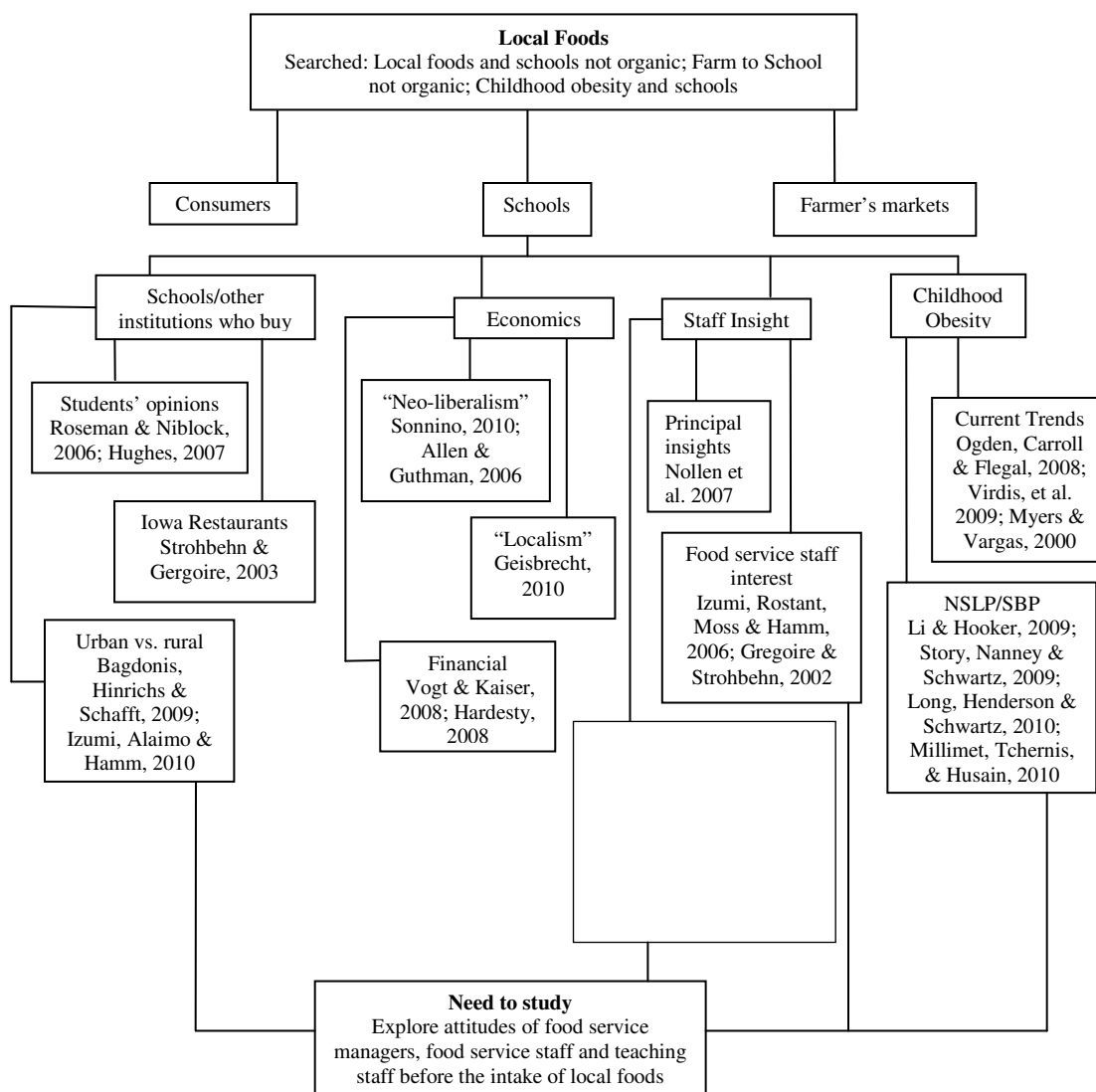
reliability very high in the Hardesty (2008) survey; with some managers commenting that failure to make a delivery meant that that vendor lost their business. With all of these concerns, how do food service managers prepare to take in local foods?

The purpose of this study was to explore the attitudes of food service managers and educators before the incorporation of local foods into Nebraska Schools. Because this is a unique phenomenon, a case study approach was used. More specifically, this is a collective case study; the individuals being studied are all experiencing the same event. Multiple forms of data were collected for a deep understanding of each case (Creswell, 2008).

Literature

There is limited research on the Farm to School Program, and much of the information found is in the form of anecdotal stories and school newspaper articles written by the food service managers or their employees. Research can be used as a tool for school administration, food service managers, food service staff, school educators, farmers and distributors to make informed decisions about the program. Figure 1 is a literature map displaying the construction of the literature review.

Figure 1. Literature map for local foods



Strohbehn and Gregoire (2003) recruited nine food service institutions to increase interest in buying local foods. Before the institutions were contacted, information from potential local suppliers and food producers was gathered to benefit the food service institutions. Three site visits were made to gather information on current purchasing practices, pre and post attitude assessments, distribute producer information and to conduct interviews about local foods purchasing. The food service institutions named the

greatest threats to local foods as improper handling by their staff and the presence of microorganisms. The post assessment showed that managers at these institutions were less inclined to buy local foods due to payment, delivery, and time complications. The restaurants had an easier time procuring local foods because they are a year-round operation and the restaurants that advertised local menu items received positive feedback from patrons. The schools in this study were unable to use local produce.

What are the results of schools that have implemented local foods into NSLP/SBP? Nearly one-third of Pennsylvania's population is rural; however, it also houses the sixth largest city in the U.S. Bagdonis, Hinrichs and Schafft (2008) found this to be the ideal setting to case study two Farm to School Programs, one in a rural setting and one in an urban setting. In the rural setting, the Farm to School program is implemented in the entire district in its NSLP/SBP; in the urban setting, it is in one school as a classroom pilot project. The researchers interviewed several people at each school, including the food service managers, school administrators, teachers, nurses, staff, parents, farmers, and community based supporters. Three positive themes emerged from interviews: "redressing a poor food environment," "fostering improved nutrition behaviors and health outcomes," and "revitalizing the rural community through support of local agriculture" (p. 113). The Farm to School stakeholders, or "champions," played an important role in the success of the program.

Similar results were garnered from multiple interviews with seven food service managers in the upper Midwest and Northeast regions of the U.S. (Izumi, Alaimo, & Hamm, 2010). The in vivo themes that resulted from the interviews were "The students

like it,” “The price is right,” and “We’re helping our local farmer” (p. 85). The researchers noted that the involvement of the farmers and educators were important for the students to accept the program. A few of the farmers even walked the halls after a delivery to connect with the students. Food service managers liked the local foods because they could specify exactly how they wanted it delivered, which saved them time. Some of the food service managers had personal connections with the farmers, expressing empathy when asked if given the choice for the same produce between two farmers which they would choose. The answer was a little from both, of course.

A similar result was garnered from a survey mailed to school food service managers in Iowa, Nebraska, Minnesota, and Kansas (Gregoire, & Strohbehn, 2002). Two hundred thirty-seven managers responded to the survey from communities greater than 10,000 people to less than 1,000 people. Approximately one-third of respondents indicated they had purchased locally grown food, most of which was fresh produce. Almost half (45.8%) of the food service managers purchased foods regularly from five different vendors. Respondents were asked to identify benefits of purchasing locally grown foods; food service managers from communities of 1,000 or less chose ability to purchase small quantities, fresher food and safer food as “significantly stronger benefits” (p. 5). Respondents rated lack of availability of foods due to seasonality and the ability to acquire an ample supply as the biggest obstacles.

Middle schools in Kentucky showed mixed results when they increased fruits and vegetables in the NSLP/SBP (Roseman, & Niblock, 2006). Nine middle schools were given an increase in fruits and vegetables as entrées, side items with dips, side salads, and

a free sampling tray. Posters and signs were hung in the cafeteria to advertise the change and volunteers and parents helped with the extra work involved. At the end of the month, the students were given a questionnaire. While the majority (68%) of students knew about the program, only 45% thought school lunch was much better or better. The majority of students who tried the most items had rated school lunch as much better; however, students who rated school lunch as worse had tried the same number of items. The researchers suggest that this shows how hard it is to get kids to eat produce, especially vegetables.

Hughes (2007) suggests that if kids knew where their food came from, they would be willing to explore more options. The From our Farms program is a learning program for children aged 3 to 8 that teaches them about the origins of their foods. The curriculum includes workbooks and activities like family cooking classes and trips to local farms. Before the program was implemented, focus groups of librarians, registered dietitians, elementary school educators, and farmers were conducted. They found that the budgets between these groups varied greatly; while some had limited budgets, others found additional funding. The groups liked the idea of the learning boxes; they were flexible and could be integrated into normal school curriculum without a problem. Interviews with parents showed that they liked the idea of From our Farms, and would participate if the program were offered through the library or school. Follow up on the program indicated that librarians had limited time to teach the program, but 67% of participants had planted a garden following the program, 75% of parents indicated that their child

tried a new fruit or vegetable, and nearly all participants had bought locally grown produce and visited a farm (99% and 97% respectively).

What about a teacher's influence on children's eating habits? The Teens Eating for Energy and Nutrition at School (TEENS) was given to sixth, seventh, and eighth grade teachers in Minneapolis and St. Paul Minnesota (Kubik, Lytle, Hannan, Story, & Perry, 2002). The dependent measures (classroom food practices to limit, and teacher eating patterns at school) were compared to the predictor independent measures (school food environment index, eating and teens index, personal health index, fat screener and demographic characteristics). Teachers agreed that students should not be able to purchase candy (69%), soft drinks (69%), or fast food items (76%) at schools, and vending machines should only offer healthy choices (69%). Most teachers (93%) reported having good health habits, despite 69% reporting high fat intakes, and only 46% consuming at least five fruits and vegetables each day. A majority of teachers (73%) used candy as an incentive, as well as cookies or donuts (37%), sweetened drinks (35%) and pizza (28%). Women tended to have lower scores, which the authors attributed to a nurturing behavior. Teachers involved in health related course work supported healthful classroom practices. Educators who were less supportive of the school food environment were found to distribute calorie dense foods more often than others, and were also unsupportive of practices to promote healthy eating.

More recently, TEENS was given to 103 students in a bachelor of education program with at least 22 weeks of teaching experience (Rossiter, Glanville, Taylor, & Blum, 2007). Results indicated that candy and pizza would most often be used as a

reward in the classroom; however they also agreed that the school food environment should limit access to unhealthy foods and promote healthy foods. While almost all respondents indicated they were in good or excellent health, fewer than 50% consumed five fruits and vegetables on most days, and 42% had a high fat diet. Seventy percent of respondents scored in the low range for nutrition knowledge. The authors conclude that these results indicate that an educator's personal practices and beliefs could hinder the development of healthy food habits of their students.

Educators are a common channel to nutrition intervention and instruction for children. A study implemented two different programs to encourage children to eat fruits and vegetables in six schools (Reinaerts, Noouer, & De Vries, 2007). One program (known as the Free Distribution Program), distributed a fresh fruit, vegetable, or serving of fruit juice to the students every morning during a break. The teachers were encouraged to consume the product with the students, and a newsletter was sent to parents. The other program (known as the Multicomponent Program) encouraged students to bring their own fruit or vegetable to school, and included curriculum tailored to the child's age. At the end of the school year the teachers were invited to take part in the evaluation which included monitoring reports and a questionnaire. Most educators (89%) in the Free Distribution Program ate with the kids during break, and 68% reported that almost every student ate their produce. The teachers in the Multicomponent Program had used more lessons in the first trimester than in the third. About half of the educators in each group indicated they would continue the program in the next school year.

Some educators have taken part in the Farm to School movement and did not even know it. Graham and Zidenberg-Cherr (2005) mailed a questionnaire to 4th grade teachers in California who used a school garden. The small survey contained questions pertaining to the current practices, barriers and attitudes of using the school garden in curriculum. Educators most commonly grew flowering plants (71%), vegetables (67%), and herbs (50%). The purpose of the school garden was academic instruction for most (72%) and to provide food for some (38%). The subjects that most commonly used a school garden were science, nutrition, environmental studies, language arts, math, and agricultural studies. While educators found the garden helpful and effective for these subjects, they also agreed that they need resources and teacher training. Educators also agreed that time, lack of educator interest, lack of educator experience and knowledge of gardening, and lack of curriculum materials as the greatest barriers to incorporating a school garden into lesson plans.

One area not addressed in this literature is the attitudes of food service managers before they are about to implement the Farm to School Program. Therefore, the need for this study is to launch a project that adds to the literature by interviewing food service managers at four Nebraska schools that are preparing to start a Farm to School Program, surveying their food service staff members, and surveying their educators. There are two main objectives to this study:

1. To conduct an in-depth interview with school food service managers to determine their attitudes and the capacity of school food service to incorporate local foods into their operation; and

2. To evaluate food service employee and educator attitudes on incorporating local foods into their school by conducting a likert scale survey among food service staff members and educators.

Methods

Four rural Nebraska schools were chosen as a convenience sample. While convenience sampling means the participants are not representative of the population, it does mean the participants can help answer the questions the researcher is looking for (Creswell, 2008).

Approvals

IRB approval was obtained through the University of Nebraska-Lincoln. Each school was contacted by a letter to the superintendent for a request that a study be conducted in their school (Appendix A), with a sample reply letter (Appendix B). After a positive reply was received from the superintendent on school letterhead, each of the schools were contacted to set up a time to interview the food service manager and deliver the attitude survey for the food service and teaching staff members.

Interview Data Collection

Food service managers were given 30-45 minute interviews concerning their work in food service and local foods. Names and schools are not identified in this study to protect the identity of the participants. Participants were asked to sign an informed consent (Appendix C). Table 1 provides a script of the topic areas covered in the

interview. These questions were followed by sub questions and probes depending on how the interviewee answered.

Table 1. Food Service Manager Interview Questions and Subsequent Probes	
1.	Tell me about your experiences working as a food service manager.
a.	What has changed since you have worked in food service?
2.	How do you see local foods fitting into your school?
a.	What plans have you made regarding local foods?
b.	Tell me about the information you have regarding the produce you are interested in purchasing.
3.	How will local foods be different in regards to planning and receiving?
a.	How will you plan menus around them?
b.	How do you expect to receive them?
4.	Tell me about the food safety practices you use.
a.	Where and what were you trained?
b.	How will they change when you bring in local foods?
5.	What new experiences will your staff have with the intake of local foods?
a.	What new skills will they need?
6.	Tell me about the support you have received for the intake of local foods.
a.	What interests have teaching, community, and administrative staff expressed?

Photographs of the kitchens of the schools and the loading areas of the schools were also taken to support the food service manager interviews. At the conclusion of the four food service manager interviews, it was apparent that more background information on the Farm to School Program and NSLP were needed to assist the data analysis. Therefore, two additional interviews were conducted with the Director of Nutrition Services at the Nebraska Department of Education and the Farm to School Coordinator at the Center for Human Nutrition in Omaha, Nebraska. The consent letter for these interviews can be found in Appendix D.

Survey Data Collection

Two survey instruments were developed for the food service and teaching staff members. The two instruments consisted of likert-scale attitude statements. These instruments were developed based on published literature (Hughes, 2007; Gregoire, & Strohbehn, 2002; Izumi et al., 2010; Bagdonis et al., 2008; Strohbehn, & Gregoire, 2003). The attitude statements for the food service staff survey comprised of 18 questions that were ranked on a five-point scale (strongly agree, agree, neutral, disagree, and strongly disagree). Demographics questions included age, gender, number of years working in food service, and number of years working in current school. Eight questions on the food service staff survey were reverse scored due to their negative connotation. The letter of consent can be found in Appendix E, the survey is provided in Appendix F.

The educator survey had 17 attitude statements to be rated on a five-point scale (strongly agree, agree, neutral, disagree, strongly disagree). Demographics questions included age, gender, number of years teaching, number of years taught in current school, and grade currently teaching. Two questions on this survey were reverse scored due to their negative connotation. The letter of consent can be found in Appendix G, the survey is provided in Appendix H.

Both surveys also had a comments section, where food service staff or educators could record their opinions about local foods and/or the survey. This section was added-in so the participant could provide additional information about his or her answers on the survey. During the development of the educator survey, it was understood that there would be certain participants who may support the use of local foods but may be unable

to incorporate local foods into their curriculum, for example musical educators. However, surveys from these educators were not discounted because the question of their support was still important.

Data were evaluated from the surveys developed for this study. The likert-scale data were analyzed using the Pearson Correlation in Microsoft Excel to associate trends between score and age, number of years working, number of years working at current school, and grade teaching.

The primary null hypotheses are:

1. An increase in age on the food service staff survey will not accompany a change in score
2. An increase in age on the educator survey will not accompany a change in score

The primary alternative hypotheses are:

1. An increase in age on the food service staff survey will accompany an increase in score.
2. An increase in age on the educator survey will accompany a decrease in score

I postulated that a younger educator would be more enthusiastic to include field trips and hands-on activities in the classroom than an older educator would. The food service staff hypothesis was based on the literature review; older food service staffers were more accustomed to scratch cooking than were younger food service staffers, who were more accustomed to heat and serve methods (Izumi et al., 2010). A one tailed hypothesis test at an alpha level of $p = 0.05$ was used for both of these hypotheses.

Total score was also compared to number of years working, number of years working at current school, and for the educator survey, grade level they teach.

Creswell (2008) recommends survey research for researchers who, among other things, want to define trends and describe the attitudes of their subjects. Both of the surveys in this study were delivered to subjects before the implementation of the Farm to School program, and were distributed by the main offices of the schools. The surveys contained a cover letter (Appendices E & G) and a postage paid return addressed envelope to return the survey to the researcher. When it was discovered that one elementary school did not receive its surveys, a second set of surveys were sent to the main office of the school for distribution.

Analysis

Qualitative.

The interviews were taped and transcribed verbatim. Transcripts were hand coded and themed by three researchers independently. In vivo codes, or codes phrased in the subject's own words, were used most (Creswell, 2008).

Quantitative.

Survey data was entered into Microsoft Excel and analyzed using the Pearson Correlation. To obtain an average rank for each attitude statement, the frequency for each response was multiplied by the number associated with it (Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1). This number was divided by the

number of participants who responded to that statement. To obtain a score for each survey participant, the same scale was used (Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1) to assign a value to the response made by each individual to each question. Before this could be done, the scale for eight questions on the food service staff survey and two questions on the educator survey were reverse scored due to their negative connotation. For each participant a score was obtained by adding the assigned value for each attitude statement within the survey. For the food service attitude survey, this score could range from 18-90, and for the educator attitude survey this score could range from 17-85. The comments section was analyzed using qualitative methods to divide the comments into themes for both the food service staff members and educators.

Four rural Nebraska schools participated in this study. The food service staff members of the four schools ranged from four to 15 members who served the elementary through the high school. The educator staff members ranged from 50 to 137 educators for elementary through high school. Only one school had one building for the elementary through the high school; the other schools had separate buildings for each of the elementary, middle schools, and high schools. The elementary and middle schools had separate, smaller kitchens from the main kitchen in the high schools in the separated buildings.

The enrollments of the schools range from 600 students to 2,000 students in pre-kindergarten through 12th grade. The percentage of students on the free and reduced meal plans range from 11.9% to 46.6%. The schools' ethnicities range from 77.50% to 98.50%

white, 3.20% to 4.20% Hispanic, 0.77% to 2.20% Black non-Hispanic, and 0.17% to 1.70% American Indian/Asian/Pacific Islander/Alaskan Native.

Two of the interviews were conducted in the high school's cafeteria; the third was conducted in a conference room that doubled as an office for a member of the teaching staff, and the fourth interview took place in a private conference room. Several pictures of the food service area, the dining area, and the delivery area were also taken. I visited the schools in late November and early December.

Results

Qualitative Study

Food Service Manager Interviews

As I walked the halls of the school with the food service manager to get to our meeting area, a voice cried out, 'My favorite lunch lady!' Six common themes were found from hand coding and transcribing the interviews. The themes are "More work for me," "Unsure," "Healthy changes," "Choice," "Nobody's addressing the problem," and "Worry about safety." Table 2 represents the themes developed from the interviews, and the key phrases that characterize each theme.

Table 2. Food Service Manager Evidence for Themes	
Themes	Evidence
More work for me	<p>“Well it sucks for me because I end up going to get it all the time.”</p> <p>“...there’s a lot more time put into cleaning and getting things ready.”</p> <p>“It kinda tends to be a bit of a longer day when everybody has to go back to the manual labor stuff.”</p>
Unsure	<p>“...we just don’t have that kind of opportunity around here to tell you the truth.”</p> <p>“I would like to be able to purchase some of them from the farmer’s market on occasion and see ya know, what kinds of things we can fit in that we haven’t tried yet”</p> <p>“... this year we’re not going to be able to do anything else probably.”</p>
Healthy changes	<p>“...last year I made some changes and I tried to do some of the low fat dressings um, we quit putting margarine on like vegetables...”</p> <p>“No pop in the building, no candy in the building. We added the 10 minutes to in between second and third hour for the mid-day snack for the kids.”</p> <p>“...we’re gonna be working with one of the coaches here and working on the fresh produce and the getting the exercise...”</p>
Choice	<p>“...give kids choices... that’s what it’s all about now.”</p> <p>“I think you want to pick and choose what you’re gonna have, I think that’s more something that the kids like.”</p> <p>“...but I’d like to do that, just introduce them to some different things.”</p>
Nobody’s addressing the problem	<p>“...we’ve basically, were gonna replace it [freezer] last year and then they decided they were going to do a bond issue but the bond didn’t pass.”</p> <p>“It seems like the older schools aren’t built quite for the electrical needs of the technology and stuff that we have anymore... Lord help ‘em.”</p> <p>“... when they do these things they don’t look at how it’s a benefit for us. What would make our life easy... sometimes we feel like nobody’s addressing the problem.”</p>
Worry about safety	<p>“...since I’ve been here they’re so busy ya know they don’t think about what they’re doing. So, I don’t know, I sometimes worry about that part.”</p> <p>“...a lot of other places don’t even have hot holding units to be able to serve from so, that scares me!”</p> <p>“I don’t want it laden with chemicals.”</p>

More work for me.

All four food service managers admitted that fresh produce would mean more labor for them and their staff. The food service managers expressed this in both positive and negative ways. A food service manager had gotten a donation of watermelons earlier this year.

“Well, it sucks to work for me, because I end up going to get it all the time,”

To get the watermelons, she had to drive to the farm herself to pick them up for the school. Another food service manager found herself in the same situation.

“They at that time said they would deliver, and they had more people working there so they could get the product to me when I needed it. Well, my first shipment was humungous and I saw that that was not feasible to have them deliver it. So I started getting in the school van and going once a week to pick up fruits and vegetables.”

However, she did not seem to mind.

“I figure they’re gonna pay me if I’m sitting in my office doing book work or if I’m going out and getting the fresh fruits and vegetables.”

Another food service manager had forgotten to order processed potatoes from her distributor, so her and her staff had to hand process fresh potatoes.

“...so we peeled potatoes and diced potatoes to go into the soup today, and one of the kids had asked why we didn’t do that all the time and it’s like ‘do you know how much time it takes to peel and dice this many potatoes?’ ... it kinda makes a

little bit of a difference in the quantity of time that you have available and how many people you've got to be able to work with that, the labor."

Donations of eggplant, squash, green pepper, watermelon, tomatoes, and jalapeno peppers from the community's garden were given to one school.

"We've had an awful lot of planning differences already because um, there's a lot more time put into cleaning and getting things ready, the pre-prep part of trimming them and all of that sort of thing. I have not had them clean the stuff before they bring it in, they just pick it up from the field and bring it to us so we clean it in the, in our sinks here and kind of get them ready there and um, trim them."

She commented on her staff several times throughout the interview,

"...most of the time the ladies are pretty good about that... It kind of tends to be a bit of a longer day when everybody has to go back to the manual labor stuff so, you kind of start to stress out a little by the end of the day on some of those days...I think the manual labor part it was the major uh, thing to most of them... I don't think they realize how good they've had it for a long time."

Another manager's staff did not take kindly to labor,

"I guess I, the biggest thing is they're afraid of knives. They'll cut the watermelon with some little knives ya know, and I tried to talk to them. They're not real receptive about trying bigger knives. One lady flat out told me she's not using a bigger knife. So I mean, I kinda choose my battles..."

Some managers recognized that food service has changed over the years; early in an interview, one commented, "...in the good old days... there was an awful lot of scratch cooking." She went on about how food service has moved to processed, pre-packaged foods, but she is lucky because

"...my staff does pretty much just about anything that I ask them to because they're very very supportive which is great for me... I know that's not always the case."

Another food service manager joked about how she would not mind having to clean fresh produce, but for her staff, it may be a different story.

"The staff might see it a different way but um, I think if we promoted it right... 'it's gonna be fresh, it's gonna be better,' there's a lot of positives it's just going to have to be the way you're going to present it."

She later mentioned how the staff might say they do not have the time, "but they do have time." It is how you manage your time, she later argues, but she knows they are behind her,

"They'll do, they may oh, gripe about it and 'oh, she's lost her head' and griping like that but they'll usually do it."

Yet another manager commented,

"working with ladies is stressful... but once they get in that routine and see how the kids enjoy it they're willing to do it..."

Unsure.

This theme illustrates the hesitation of each of the food service managers to take in local foods. Finding farmers and support seemed to be a daunting task.

“I mean, we just don’t have that type of growth around here... we just don’t have that type of opportunity around here to tell you the truth. I wouldn’t know where to, other than potatoes I wouldn’t know where to buy anything else really local.”

Another manager thought she would also have problems finding local produce,

“Just maybe offering the students some more, a choice of different and unusual fruits and vegetables, not the repeat, but I kind of think we’re kind of hindered right now because of the cost and the availability.”

Even if a food service manager knew about options the school could purchase from, they were uncertain as to how to get started.

“About the only one I know anything about is... the dairy. Um, I mean I know the... farm exists and the pumpkin patch exists but that’s just about all I know in this area. I know we’ve asked them about a year ago, I think a year ago, and they didn’t felt like they were up to supplying enough.”

One food service manager seemed to have given local foods more thought and planning,

“I would like to be able to purchase some of them from the farmer’s market on occasion and see ya know, what kinds of things we can fit in that we haven’t tried yet. I’m wanting to do some more of it. I have kind of talked to [family

name]...from the orchard... this year we're not going to be able to do anything else probably, but next year I've gotten a couple cases of apples from them..."

Even though she had plans in place, like the others, she seemed unsure of how to execute them. Pricing for the local foods was scarcely mentioned, however, a few food service managers were willing to clean the produce if that meant it would be cheaper.

"I'm gonna say that if I didn't have to pay as much and could clean it myself I wouldn't have a problem with that."

One food service manager knew she had the support of the school board and administration, which meant she might be able to buy local produce at a slightly higher cost than what her vendors were providing.

Healthy Changes.

Many schools are implementing wellness programs to combat childhood obesity. These programs can include physical activity as well as changes to the school's food environment. All of the food service managers were enthusiastic about these changes.

"...last year I made some changes and I tried to do some of the low fat dressings um, we quit putting margarine on like vegetables we use butter buds, which doesn't really have a fat content but has some of the flavoring to it. We basically don't add salt to vegetables. I went through most of the recipes like our bread, this year I cut the fat back by half and it was ok."

The wellness program in one school went beyond the lunch menu. During our interview, the coach came into his office and joined the conversation.

“No pop in the building, no candy in the building. We added the 10 minutes to in between second and third hour for the mid-day snack for the kids. They get 100% fruit juice or a peanut and raisin snack, or they have like, a chex mix snack or they get a fresh fruit.” [coach]

Food service managers mentioned how they were trying to provide more dark green and orange vegetables for the students. The teaching staff, coaching especially, was getting involved in physical activity; one school added a weight lifting program as a part of their wellness program.

“...we’re gonna be working with one of the coaches here and working on the fresh produce and the getting the exercise and that sort of thing in.”

One food service manager has taken the education into her own hands.

“What I’ve been trying to do along with this fruit and vegetable program is run like some flyers sometimes and tell ‘em the different types of apples and what apples can be used for and I have some tools in that area that I could ya know, display and I’ve got some posters up. I have little ideas sometimes to; oh paperwork where they can do crossword puzzles and that came with this fruit and vegetable program... I have had speakers come in in the past, like the person from our local grocery store. She brought probably a table this big [gestured to conference room table] of all different kinds of fruits and vegetables and picked up each one, explained it to the children, uh maybe told them what season they have them, that they’re available, where they’re raised... I’d love to have a field day trip to maybe go out to [farm] and, not only to their fields but to their shop

and so the students learn where their food comes from. Um maybe start some little projects with the students about planting some kind of vegetable or a garden ya know, I just, I'd love to do that."

Another food service manager discussed changes she has worked on with educators in the school. The elementary planted a garden so the kids could watch things grow and learn where their food comes from. The school's FFA has its own greenhouse where they grow vegetables and flowers to sell.

Choice.

Each of the food service managers emphasized giving the students choices for produce.

"I mean, everything I've learned in the last two years going to our intent [NTENT] classes in Lincoln is give kids choices... that's what it's all about now. Give 'em some choices so maybe they'll eat something and then they'll pay attention and behave better in class."

One manager explained it simply,

"When you go to a restaurant you don't wanna just 'Ok, alright I'll have your lunch.' You know I think you want to pick and choose what you're gonna have, I think that's more something that the kids like that way too because they're in charge..."

The food service managers all agreed that the students need more nutrition education.

“Yeah when they do some of these programs, part of it needs to go to education to the kids. Ya know, not only what’s good for you but, ethic wise... if you’re not gonna to eat it don’t take it... they just don’t realize at their age that that’s what they need... the kids just don’t have parents doin’ that... I don’t think parents really know. I mean they don’t have a clue what their kids don’t eat.”

“...they’ll pick up like an egg, and think that’s their fruit or vegetable and it’s like ‘no [laughs] let me explain this again.’ And some of them you’ve just got... I know, I know, but a lot of them haven’t had that kind of education and that sort of thing to be able to get the idea and just because it’s on the salad bar does not make it a fruit or vegetable...”

One food service manager has actually taken it upon herself to help with nutrition education. Her goal was to go to the fourth grade classroom each month and teach them about a piece of produce.

“... we did a pumpkin stew tasting down there, and the kids enjoyed that... last year we did something with sweet potatoes, and so I brought them a, oh sweet potato fries. I brought a sweet potato and then I just kinda talked about how the sweet potato grows in sandy soil and how we dig them up and how they vine and then I let them feel the sweet potato... so we’ve done that, but I’d like to do that, just introduce them to some different things.”

Another manager liked the idea of introducing new foods to the students as well.

“...that day I made each student take one asparagus. I told them they just had to taste it... I would say 85% or 90% tried it or at least ate it all... I call it a

vegetable casserole, and it was made, our main ingredient was eggplant. Eggplant, peppers, tomatoes, we ya know and some cheese ya know and you just make a casserole and ‘would you like to try my vegetable casserole?’ and they tried it, and like I say not all of them ate it but they tried it at least and I never did tell them it was eggplant so you can be sneaky and that way to get kids to try stuff.”

The food service managers did not agree on whether or not the kids accepted produce in general. One manager discussed her first year at her present school, and how her food service staff told her that the kids at her school do not eat fruits and vegetables.

“...coming from [City] that was kind of, I find that hard to believe. So we cut up, and the first year the fruits didn’t go on the salad bar we just had done little individual dishes of fresh fruits and that sort of thing and they took ‘em and they kept taking them and the ladies are like ‘I would not have believed that was true.’”

Another manager believes that her students do not eat produce and that they waste it when they do take it.

“...I mean you think the kids would all eat fruits but they don’t. Um, and vegetables... corn I think they probably eat the best... I try to do the dark green and orange vegetables. Which the kids aren’t very happy with. I mean the ones that like it like it, but there’s a majority I would say is, they don’t, they don’t eat it... part of what we find is the kids take, maybe so much... I mean you’ll see them waste, they’ll make a whole big salad and not even touch it... Or you’ll see

the kids take two fresh pieces of fruit, they don't have time to eat that, there's no way."

Other managers were upbeat about students taking produce.

"...I think they've taken more vegetables and that sort of thing and it's kind of increased 'cause we did a little bit of that with the elementary schools... We do a lot of broccoli and cauliflower and baby carrots and that sort of thing with the fresh vegetables for them over there and I think that makes them want it more as they get into the older grades...if you just put a whole orange out there they're not always gonna pick it up and we do have a bowl of fruits that's just apples, bananas, like the green apples that are, and red apples because I think the appearance, the color and that makes an awful lot of difference to them..."

"...the students really like the fresh vegetables... and they always like the fresh fruits..."

Nobody's addressing the problem.

Before these food service managers take in local foods, they feel there are some big hurdles to address, and their voices are not being heard.

"Well, my big problem is I do not have a very large freezer. And [laughs] that's, that's a drawback for wanting to do anything that would require us to buy a large volume at a time... Um, we've basically, were gonna replace it last year and then they decided they were going to do a bond issue but the bond didn't pass. But we still don't have a new freezer."

Food managers at larger school districts worry about the smaller districts. They expressed concerns about their needs and safety.

“It seems like the older schools aren’t built quite for the electrical needs of the technology and stuff that we have anymore. So many places are putting in more computers and those are the things it takes away from the, the kitchen power and that sort of thing...’cause some of those smaller districts and that sort of thing, if, I’m sure they were built in the ‘50s and if they’re putting in computers in their places and they’ve got the little bitty kitchen, Lord help ‘em [laughs].

One manager has had problems with the commodity program through the USDA. Poor communication between the school and the supplier has given her a negative experience with fresh produce.

“So when I first signed up for it, I thought it was gonna be somebody local, like our vendors that we already use... No, it’s some company... I have to order by Tuesday for the following Monday delivery, Friday for the following Thursday deliver, which that, is very hard to do... when they do these things they don’t look at how it’s a benefit for us. What would make our life easy... sometimes we feel like nobody’s addressing the problem. And maybe they are, maybe we’re just over concerned.”

Another manager also had expressed concern with produce commodities. She had made the decision not to order any because the process looked confusing, and she was told the farmers and companies do not communicate well.

Worry about safety.

Each manager expressed some sort of concern over the safety of the foods; whether it is the safety of the local foods, or a concern for schools with less to work with. While discussing cooling methods, this manager admitted,

“...I mean we do it, but it’s such a short span of time from the time we take it off to the time we leave that, ya know, you don’t see a big drop but, we try to log that... I don’t know, since I’ve been here they’re so busy ya know they don’t think about what they’re doing. So, I don’t know, I sometimes worry about that part of it... Especially if it’s raw meat, I’m usually the one that’s dealing with it so I always make sure I’ve got it cleaned up before I, I uh leave it but, um, even with your, say watermelons, ya know they’ve sat on the ground, or you have potatoes, they’re in the ground so they’ve got more bacteria than anything fresh else that we get.”

One manager showed more concern for her students’ habits and other schools’ practices than her own.

“Too many of the kids think that the uh, two second or 10 second rule, having dropped something on the floor is ok and that’s not, that doesn’t go by me. I, if they’ve dropped it on the floor I grab it and throw it away whether they’re complaining about it or not it’s like ‘no! you can’t have that!’ ...a lot of other places don’t even have hot holding units to be able to serve from so, that scares me! [laughs] It’s like ‘ok, ya know, how old is your school and what sorts of things are they doing, you know to be able to keep your temperatures and do that

kind of thing' and I mean if you're baking it right then and putting it out to do that you might be ok but if you have to pull it over from someplace else and it has to fit and serve your lines what do you do?"

Chemicals and pesticides were the main concern for another manager. Her and her staff had the most extensive food safety training of any of the other schools.

"... You know the chemicals that are on it because if their son or daughter is in school here ya know, they're not going to be putting chemicals on that shouldn't be and things like that. I don't want it laden with chemicals... It's like I need to know the availability, ya know, who is farmer Brown down the road? Ya know, that will be giving a, who are we buying peaches from or something like that?"

Discussion

Food Service Manager Interview

Each school was unique in their situation. The varied responses from each food service manager represented how each situation was different, and how implementing a Farm to School program is a difficult process. The six themes, "More work for me," "Unsure," "Healthy changes," "Choice," "Nobody's addressing the problem," and "Worry about safety" represent themes common to all food service managers. Overall, each of the food service managers cares about "her kids."

Each of the managers mentioned that implementing a program like Farm to School would mean more work for them. A few did not mind the extra work; they had made it clear they were doing it for the kids. This is consistent with the findings from Izumi et al. (2010). There were phrases in the study that were consistent with the food

managers interviewed in Nebraska; “freshest possible food” and “provide the best quality and nutritious food we can get to the kids we serve” (p. 85).

The food service managers were all unsure about the program in some way. Some were unsure about what kinds of local foods they could procure. They seemed to not know what to do with some of the crops that grew near their school or whether the farmer would be willing to supply to them. Others had been making plans but seemed hesitant as to how they would carry out. Vogt and Kaiser (2006) agree that there needs to be some sort of infrastructure for farms to start selling to this type client. They recognized that financial backing and a central distribution center would be the greatest assets to this type of situation.

All of the schools had been making changes beyond Farm to School for a healthier student body. One manager was going to be a part of Fuel Up to Play 60, a program sponsored by the National Football League and the Dairy Council. Another school had opened a healthy snack bar in the last year, and the educators were preparing to take part in a wellness program to lower insurance costs. Some managers had the support of educators to introduce the students to new vegetables. These situations illustrate a supportive administrative staff, which several studies suggest is the key to a successful Farm to School Program (Nollen et al. 2007; Izumi et al., 2006; Bagdonis et al., 2008; Izumi et al., 2010).

Choice was one of the most common words found in all of the interviews. Several managers had mentioned their “intent” (NTENT) class in Lincoln. This is a class for food service managers in Nebraska through the University of Nebraska and the Nebraska

Department of Education and Nutrition Services. This class has emphasized choice to food service managers because giving students more choice will mean less plate waste and a higher consumption of fruits and vegetables. Each of the schools had a salad bar as a cold meal option for students. The food service manager who offered the most choices seemed to have the most successful school lunch program; her students had the option of a hot lunch, a sandwich, the salad bar, a “grab and go” meal, or a soup meal. All of the options could also be mixed and matched for a full meal.

One manager was pessimistic when it came to the nutritional decisions of her students. This school has a hot meal and a salad bar meal, and a snack bar that is not part of the school lunch program. She had made the vegetables self-service, because she said that otherwise she sees too much waste. She mentioned that while the snack bar had healthy options in it, such as carrot sticks, the students “didn’t go for it.” She had recently started serving a “juice alive” slushy, a 100% fruit juice fortified with calcium; she was worried the students did not get enough vitamin C.

Other managers also gave the students a choice of a hot meal or a salad bar meal. One school’s salad bar had two choices of vegetables and four choices of fruits each day. She mentioned that if she noticed any plate waste, it was with the hot vegetable; however, she did not see much of that because the students always have the option to take the cold.

The school environment became apparent as each of the food service managers told stories. The lack of support of one manager could be linked to the state of her school. This year her school had lost their superintendent, and for the time being, they had a retired administrator. This substitute was not completely supportive of their school lunch

program. While observing the elementary one day, he commented on the frustration of the food service staff with the indecisiveness of the students by saying, “That’s why you don’t give them choices.” Further, even though she had said they have the money saved up for a new freezer, they were not getting one and she did not know why.

Several managers were very excited about the program. Their frustrations were not aimed at their own schools, but at other schools that did not have the resources they had. Each of these food service managers had discussed their supportive staff, community and parents. Specific members of the staff were mentioned, such as coaches and FFA staff, because these managers knew they were behind them. After the interview, one manager had mentioned how her superintendent ran marathons on a regular basis and he too was excited about getting locally grown foods.

The same could be said for these schools when it came to safety practices. The frustrations of the lack of resources of the smaller schools were mentioned in this aspect as well. These schools have had extensive training in food safety and have used nationally recognized programs like ServSafe. The food service staff at another school only had training from the food service managers themselves. While the manager at this school usually double-checked the work of the food service staff, she did admit that she would catch missteps in their food safety practices. Her main concerns were with gloves, because her staff would forget to remove them or wash their hands when they switched tasks.

Results

Photographs

Two sets of photos were taken representing the frozen storage and loading areas from each school. The pictures best represent the differences between the school food service facilities for the four schools. Food service managers either brought me back to their freezers with a smile on their face, and waved to them as if they were on *The Price is Right*, showing me the next prize, or gestured to their freezer as if it were an after-thought, and reiterated that the school needed a new one.

The loading areas are the areas that the food service managers receive orders from their vendors. Food service managers either had large, open areas to receive their orders, or had confined spaces with outside areas that were unkempt.

Discussion

Photographs

These photos represented the importance of the school lunch program to the schools. Some of the schools have kept up to date on equipment and storage, while others lag behind. It was clear that some schools were more prepared than others for the implementation of the Farm to School program.

Results

Informational Interviews

Two additional interviews were conducted with the Director of Nutrition Services at the Nebraska Department of Education and the Farm to School Coordinator at the Center for Human Nutrition to clarify issues that the food service managers discussed. Four themes emerged from the interviews; they are “Complicated issue,” “Opportunities,” “What needs to be done,” and “Few schools know.” Table 3 represents the themes that were developed and the key phrases that made them up.

Table 3. Informational Interview Evidence for Themes	
Themes	Evidence
Complicated issue	<p>“...they need to make sure that they’ve tried... getting five different bids from local famers and then be able to justify the choice they made especially if it wasn’t the lowest bid”</p> <p>“...they [farmers] need to understand the limited budget that the schools are working on because I’ve heard from farmers who do not understand that and that’s frustrating...”</p> <p>“changes on your menu at the last minute is difficult at best for a small school where they can maybe grab something out of the freezer; it’s almost next to impossible for some of our larger school districts.”</p>
Opportunities	<p>“...they can apply to be in the fresh fruit and vegetable program... then they can go out and buy maybe some fruits and vegetables they couldn’t afford to buy any other way...”</p> <p>“...these farmers are getting free advertising by these districts because they’re [the schools] usually writing something up in their newsletter that goes out to all the parents...”</p>
What needs to be done	<p>“...this coordinator really needs to be someone that would either have the experience of working with more than just one of these groups...”</p> <p>“...you need support from your administration and teachers... who can like help the food service directors get more of the education piece of it going...”</p> <p>“...if they know ahead of time they’re not going to be able to make their delivery they need to let the schools know that...”</p>
Few schools know	<p>“...when I talked with the representatives at the Dairy Council, they said very few schools nationwide have applied for this grant money so they don’t think anyone knows, realizes it’s available.”</p>

	“...it can be small but I mean once a month, a couple times a year you get your local foods it doesn’t have to be every single day of the school year.”
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Complicated issue.

There are many concerns that need to be addressed before implementing a Farm to School program in a school system. The Director of Nutrition Services summed it up quite nicely,

“...when they purchase food from a local farmer it’s not as easy as if I just want to go out on a Saturday morning to some farm and say “can I buy a basket full or a sack full of corn.” They need to go through standard procurement procedures and so they need to make sure that they’ve tried, made a good faith effort in getting five different bids from local famers and then be able to justify the choice they made especially if it wasn’t the lowest bid. And the farmers of course are not used to this at all because they’re used to having people come out to their farm and you know just, “Hey you got any extra potatoes today, or you got any extra apples today?” “Sure just go pick some and we’ll charge you for it.” And we need, in school lunch, we need to have specifications we need to have guarantees of a certain quantity and that it will be delivered on a certain date. And so it’s a complicated issue, it can certainly be worked through because other states, particularly with a Farm to School coordinator have been able to work through all that.”

The Farm to School Coordinator also expressed unease about the bidding process.

“I think that they need to understand... what the cost of food the food service directors go through, ya know their buying and bidding, procuring process I think that would be really helpful for them to know. I think they need to understand the limited budget that the schools are working on because I’ve heard from farmers who do not understand that and that’s frustrating you know? ...it’s not going to be their only source of income it just needs to be something they’re willing to try and experiment with.”

She mentioned additional hurdles, but also offered possible solutions.

“...obviously the growing season is going to be a problem, it’s short, um but there’s nothing that says Farm to School has to go year-round ya know it could be just an introduction sort of thing... and another big thing is the infrastructure, you have a farmer maybe that produces vegetables on four acres of land or less, they’re not going to be able to supply 40,000... so there’s been a lot of talk about maybe, food talk for aggregation, but that’s, could be down the road.”

Being able to plan for unexpected situations is something that food service managers are used to, but Farm to School adds an extra level of uncertainty.

“Planning, you know if like buying from Pegler or from Sysco or from Thompson or from any one of the other food distribution companies, you request x amount of pounds and pretty much you’re going to get those, what you requested. And if a,

if something happened to one provider to Sysco they would have to go out and find another producer to meet their, the contract says what they have with the schools. With a local producer, you know all kinds of, a tornado, hail storm, and all of a sudden a school has planned something with these apples on this day and the producer doesn't have them, they aren't available... because changes on your menu at the last minute is difficult at best for a small school where they can maybe grab something out of the freezer; it's almost next to impossible for some of our larger school districts."

The Farm to School Coordinator conducted a survey with food service managers which indicated that their number one concern was food safety. The Director of Nutrition Services also addressed the issue.

"Actually the USDA recognizes that and two years ago they made a brand new division, food and nutrition services? They added another division under that called food safety, and they recognize there's food safety issues in schools anyway and you know with, and not the school's fault really... sometimes contaminated meat has come into the schools, contaminated spinach, you know we saw those in the newspaper. Now all of a sudden we also have the Farm to School coming in and we have a fresh fruit and vegetable program in some of our schools, so we have all this fresh food coming into the schools so recognizing that we have a higher level of concern now for food safety."

Opportunities.

Even though there are a lot of barriers to Farm to School, there are several opportunities for schools to take in local foods as well as gain new equipment and skills.

“... [The USDA] created what we call food safety and they’ve got a food safety university ...and what they have done is they’ve invited each state to nominate two state agency employees and then two food service directors to attend the food safety university. It’s a wonderful, phenomenal one week experience, they just get to see everything even monitoring chilling down food with the newest, highest tech equipment available; and the responsibility for those four individuals is to come back to the state to serve as a resource and also a ‘train the trainer’.”

The USDA had also recognized that some of its restrictions were unattainable when it came to local foods.

“...some of guidance from the USDA on what is now allowable they, at first they thought it was very strict it pretty much had to be just almost right out of the field with the dirt still on it and now they’ve kind of pulled back a little ...so now a farmer can actually put product in a plastic bag, they can now take the husks off the corn cobs. Basically they can’t change the nature of the product so a lot of our schools, what they really need is product that is in plastic bag so they don’t, they don’t have the equipment nor do they have the labor to clean it. So I think that as time has gone on, it’s much more realistic that schools can use Farm to School...”

Schools can participate in other programs that can allow them to purchase local foods for their school lunch program.

“The third program, we’ve now had it for 4 years, and not all states were able to participate in what’s called the Fresh Fruit and Vegetable Program. And that is a USDA program under the Child Nutrition Program. To be eligible to participate in the program, first though the school has to have 50% or more free and reduced priced students. The second criteria is that they must also be in elementary school. If they meet those two criteria then they can apply to be in the fresh fruit and vegetable program... if they are accepted then we take the enrollment times a certain dollar figure and that dollar figure is based upon how much we can provide per student; the USDA gives us an allotment from anywhere from \$50 to \$75 per student... and this is how much money you’re going to get for the whole year. And then they can go out and buy maybe some fruits and vegetables they couldn’t afford to buy any other way. This is kind of like an extra...”

Farmers can benefit from Farm to School as well, especially if they understand the bidding process. The Farm to School Coordinator mentioned,

“I know a lot of the farmers are interested in this and if there’s a great enough volume ya know, incoming then they can make the price more competitive. Especially with these larger schools... that might be more of a possibility. The other thing that I think is kind of cool that I didn’t really think about that was... these farmers are getting free advertising by these districts because they’re usually

writing something up in their newsletter that goes out to all the parents so, you know if it's someone that can sell to individuals or sell to farmer's markets or something you know like another marketing tool for them that's free and going out to all the hundreds or thousands of parents and families."

Not only do farmers want free advertising, they are also interested in being involved with the schools.

"I think that the farmers are willing to be more hands-on. I think right now it's just beginning and it's... gonna take more than the food service directors to kind of get that hands-on piece of Farm to School... but we asked that question on our survey also if they would be interested in visiting the school or having students to visit their farm and most of the farmers we surveyed said that they would be interested in doing that so I think it's a matter of kind of figuring out how to get that to work and getting someone to coordinate it."

What needs to be done.

There are basic necessities that the participants of a Farm to School program need to fulfill in order for it to succeed. The Director of Nutrition Services explained why a Farm to School Coordinator is so important.

"... that position is kind of a unique position because our perspective is limited to the Child Nutrition Program. We don't know very much at all about the Ag part of it, and then you know we have the producers, um the farmers and you know all their hurdles that they have to deal with. So this person, this coordinator really

needs to be someone that would either have the experience of working with more than just one of these groups or have the type of personality that could work with diverse interest groups and pull something together to make it go. I like the model out of Oklahoma in which they have a Farm to School coordinator who is located in the department of, State Department of Agriculture. And yet she goes out to the schools and promotes some of the locally produced food in the state of Oklahoma. She can work with the um, like I said the producers, she can work with the schools. She can work with the um, the bids that the schools would have to submit providing any specifications so I like that model...”

Support is one of the most important elements of a Farm to School program.

Whether it is support from staff,

“[Food service managers] need support from their staff, first and foremost because they’re the ones who are going to be preparing the food... we just need to make it grow and have like, the farmers and things like that; you need support from your administration and teachers and things like that who can like help the food service directors get more of the education piece of it going...”

“But I think the biggest thing that the superintendents will say, “I just cannot believe how giving these kids a piece of fruit in the afternoon improves behavior, makes them more attentive. What a difference it has made in our school by just giving them this fresh fruit or vegetable snack.” Now for Farm to School, I think as far as the administration at the schools... I’m guessing that “well I want the

food service manager to do what that person needs to do to get food into the kitchen and feed the kids.” And that manager knows what needs to be done and they’re going to make those decisions.”

support from the farmers,

“I think [farmers] just need to know how important it is, that schools, that they can guarantee a delivery. That that delivery is just critical, that you know and if something were not, if something were to happen uncertainly, a weather crisis or something like that, you can’t control that but if they know ahead of time they’re not going to be able to make their delivery they need to let the schools know that... and just to understand why it’s so important for the schools to have a uniform size, shape, and quality to a product that they’re serving the kids. The receiving part, you know that, you know how is it going to occur? The staff don’t have enough, the kitchen staff, sometimes there’s only one person in the kitchen and the janitor helps out. So they might not have enough support to go out and help unload the pickup. Now, I know a lot of the schools have told me stories about they’ve had to help, and they do help, but they may not always be able to help, especially if it’s during the serving time. So I think things just developing, kind of entrepreneurial approach to selling your product, versus selling it either at the place where it’s grown, at the farmstead or at a farmer’s market.”

or support from the parents and the community.

“I’ve had contact from a lot of different parents and I can’t tell you where they all come from but some of them are from out of town and um, I just had contact from a parochial school parent that’s getting, sort of working on their food and nutrition in their school, they kind of have like a committee going and they wanna ya know, start doing more Farm to School and they want to know how to get started so I think parents really want to get involved in this and unfortunately I, all I can recommend to them is that they get in touch with their food service directors or talk to the farmers... and there’s not a lot of volunteer opportunities right at the moment but I think it’s growing. I’ve definitely heard from community members too...”

Few schools know.

One of the biggest problems with Farm to School is that most schools are unaware of the kind of support and information they can get from various people and programs to help get them started.

“...we’re going to partner, encourage a relationship with Fuel Up to Play 60... I heard that there is an opportunity to apply for a \$4,000 grant if the school signs up to the Fuel Up to Play, and when I talked with the representatives at the Dairy Council, they said very few schools nationwide have applied for this grant money so they don’t think anyone knows, realizes it’s available. So in fact this morning I sent a proposal... to invite the Dairy Council to come to administrative days and you know, do a presentation on Fuel Up to Play 60 in the breakfast program because there’s fewer restrictions on what the government would have on grants

and therefore it would be easier for them to apply for that \$4,000 and maybe they can buy like a salad bar, or maybe they could buy a portable... food cart where they could take the fresh fruits and vegetables down a hallway so the kids can kind of just pick something up between classes.”

Food service managers who really wanted to be a part of Farm to School took it upon themselves to get involved and get it done.

“One school just kind of went to farmer’s markets and met people and said “hey I’ve got a school, or eight schools, this district that I really want to source this food what can you get me?” Ya know so it was more of a trial and error sort of thing... I think that they were just kind of interested overall and they kind of learned about what was out there... we had a Farm to School meeting in December. We had some producers come to that and it was an opportunity for people to network so... we know sometimes where the connections were made.”

Both interviews gave final thoughts which, if they were given to an interested party, would reassure and inspire them. The Farm to School Coordinator emphasized that every success is important.

“I think it’s just a matter of like telling people to kind of celebrate their small successes because what they’re doing in this realm of things is really huge. So that would be one of the things I would say is just start small, celebrate your small successes, I don’t think it has to be, I mean it can be small but I mean once a

month, a couple times a year you get your local foods it doesn't have to be every single day of the school year."

The Director of Nutrition Services admitted that everyone will stumble, but that is how they are going to learn.

"I guess the only advice I would give is just know that when you go into it, it's not going to be run smoothly. You know that we're all learning together and that they're going to have to be understanding of the farmer wanting to contribute to the school. They may not have the full understanding of what all is involved once that food gets to the school; the same for the manager, understanding some of the issues with the producer. Now this is all new to them, I thought [Name] said it so eloquently, "They just were never used to food specification sheets," you know, "what?" So I think it's just um, communication has to continue all the time and opportunities to be at a place like the [Town] meeting or other places around the state... so that all of us that are involved and being interested in Farm to School will kind of hear what's going on with all the others. Communication really is the key."

Informational Interview Discussion

The informational interviews were conducted to clear up information from the food service manager interviews. However, they did more than clear up the food service manager interviews. They also offered insight into the current state of school food service in Nebraska, as well as how the Farm to School Program could potentially develop.

The Director of Nutrition Services seemed to be unaware that Nebraska did, indeed, have a Farm to School Coordinator. Many of her suggestions had already been put into motion by the Farm to School Coordinator. However, the Coordinator worked mainly with a large school system, not Nebraska as a whole. Farm to School is a new program, especially in Nebraska, and perhaps in a few years the Coordinator will branch out and be available to more school systems.

Both of the interviews offered insight for many of the reasons it is hard to get a Farm to School Program started. The Farm to School Coordinator expressed her frustration with the lack of understanding of the farmers. Additionally, because the farmers do not understand the processes a school must go through to procure foods, they become frustrated as well. Schools also may be hesitant to buy local foods because some had bad experiences with other programs, such as the commodities program.

The Director of Nutrition Services cited several resources, such as Fuel Up to Play 60, which most schools are unaware of. These resources, she explained, can be used to cut the cost of starting a Farm to School Program. With a few filed forms, a school could receive enough money to purchase a much needed piece of equipment, or pay for fresh produce for part of the school year.

The USDA and the state of Nebraska are in support of the Farm to School Program. To give the program a boost, the USDA has loosened restrictions on fresh produce to make it easier for the farmers and schools to make arrangements for delivery and processing. The USDA has also created a new division, Food Safety, to address the

food safety concerns of local produce. The state of Nebraska has accepted a Farm to School grant that will be awarded within the next two years.

Quantitative Study

The four schools involved in this study were slightly varied in size (600 – 2,000 students), but all were rural. Food service staff reported working in school food service for an average of 11.4 years; educators reported that they had been teaching for an average of 17.6 years. The average number of years working in their current school was 10.1 years for food service staff and 11.7 years for educators (Table 4). The food service staff scored an average of 11.0% lower than the educators on their respective surveys. About 14.0% of food service staff and 6.5% of educators did not report an age. Of those who did not report an age, 94.0% were female. Only 18.0% of all participants surveyed were male; 2.4% of all food service staff members and 22.4% of all educators were male. The educators were 11.8 years younger on average than the food service staff.

Table 4. Mean years working in professional field and mean years working in current school		
	Food Service Staff	Educators
Years in Professional Field	11.4	17.6
Years in Current School	10.1	11.7

The response rate for the food service staff and educator attitude surveys were 86% and 47%, respectively (Table 5).

Table 5. Response rate for attitude surveys	
School Staff	Response Rate
Food Service Staff (<i>n</i> = 49)	86%
Educators (<i>n</i> = 152)	47%

Tables 6 and 7 list the mean, median, mode, and range of both the food service staff survey and educator survey total scores and age.

Table 6. Mean, median, mode and range of total score of attitude surveys		
	Food service staff	Educators
Total Possible	90.0	85.0
Mean	61.1	66.9
Median	60.5	67.0
Mode	60.0	67.0
Range	51.0	34.0

Table 7. Mean, median, mode and range of age of attitude surveys		
	Food service staff	Educators
Mean	55.0	43.2
Median	55.5	43.0
Mode	52.0	37.0
Range	50.0	49.0

Results

Food Service Survey

The food service workers at each school had the opportunity to participate in an attitudes survey regarding the intake of local foods. The survey consisted of 18 questions, each with the option to answer strongly agree, agree, neutral, disagree, or strongly disagree.

Table 8 represents the rank of each question on the food service staff survey. A rank refers to the average number answered for each question.

Table 8. Rank Scores of Food Service Staff Attitudes Toward Local Food Use	
	Rank¹
1. Incorporating local foods into the school lunch menu will be rewarding	4.3
2. I encourage the use of local foods in schools	4.3
3. Adding local foods to the school lunch menu will add labor	3.3
4. I enjoy opportunities to prepare menu items from scratch (homemade)	3.7
5. Adding local foods to the school lunch menu will increase the cost of school lunch meals	2.9
6. I enjoy learning new cooking skills and techniques	4.0
7. Students in our school do not accept a variety of raw fruits	2.4
8. Students in our school do not accept a variety of raw vegetables	2.6
9. Students in our school need to improve their food choices (nutrition)	4.0
10. Local foods will add nutritional value to the lunch menu	3.9
11. Preparing fresh fruits and vegetables takes too much time	2.7
12. Preparing foods from scratch (homemade) takes too much time	3.0
13. More space is needed to prepare fresh foods	3.4
14. More space is needed to store fresh foods	3.8
15. Using local fruits and vegetables provides safe foods for students	3.6
16. Using local poultry and meats provides safe foods for students	3.4
17. The community is supportive of incorporating local foods into the school lunch menu	3.7
18. Administration and teaching staff are supportive in incorporating local foods into the school lunch menu	3.7
¹ Scale: 5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1 = Strongly Disagree	

Figures 2, 3, and 4 represent the correlations of total score compared to age, number of years working in food service, and number of years working with current school on the food service staff survey.

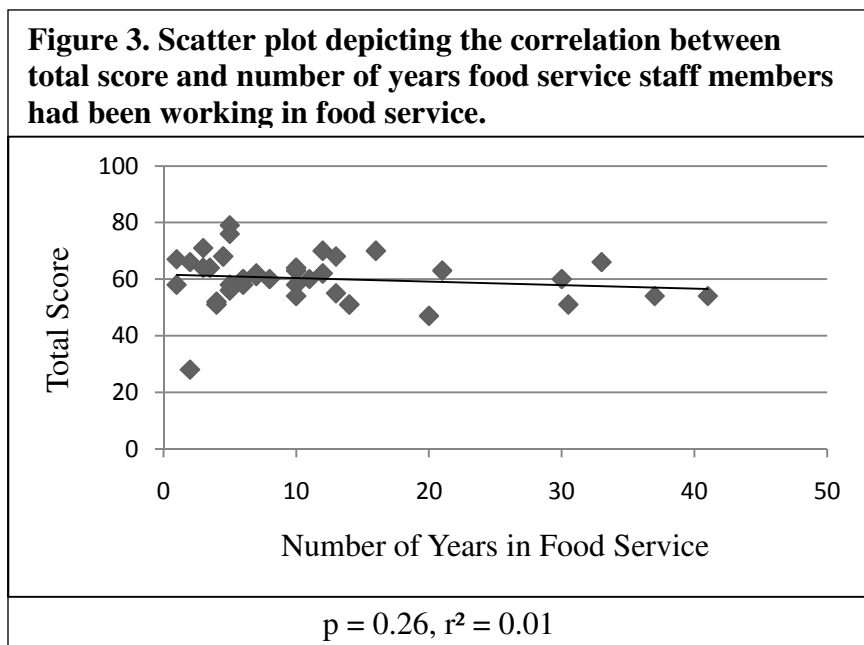
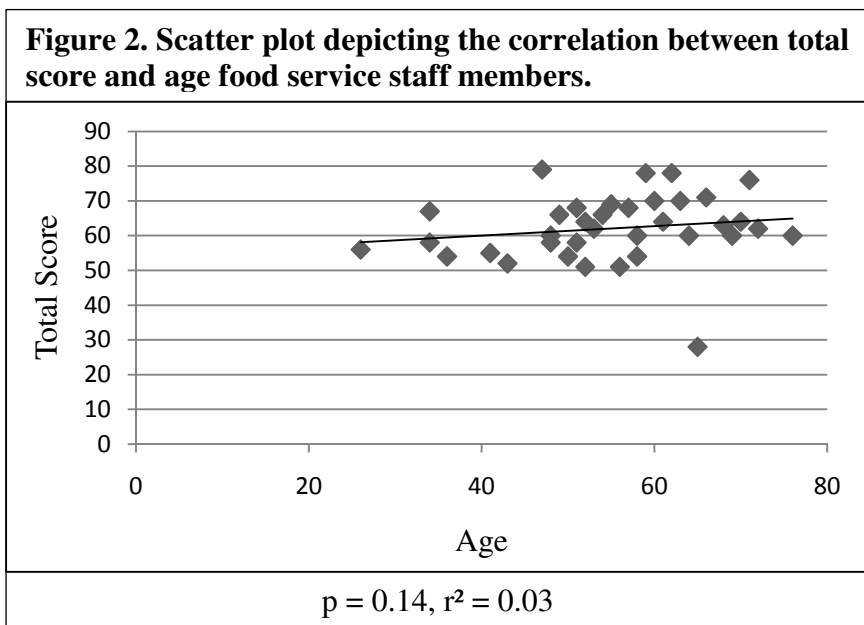
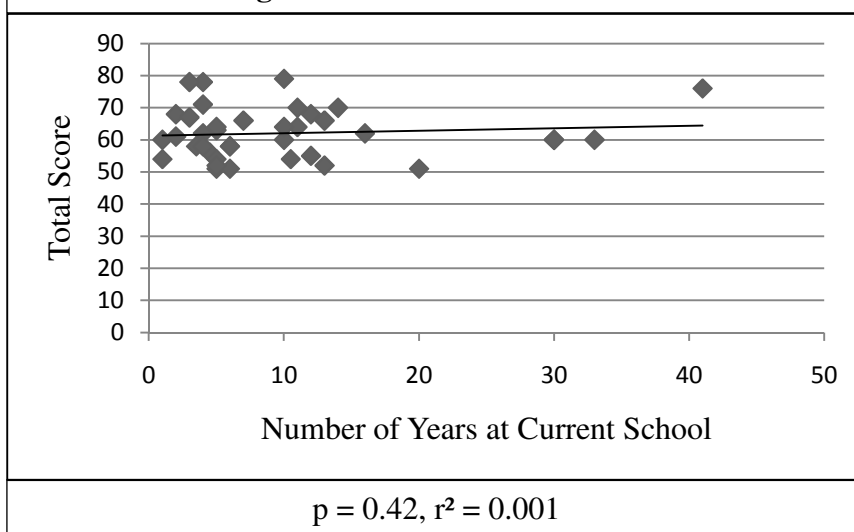


Figure 4. Scatter plot depicting the correlation between total score and number of years food service staff members had been working at their current school.



Discussion

Food Service Survey

The food service staff survey had a high response rate of 86%. The average total score was 68%. The purpose of this survey was to assess the attitudes of the food service staff members for the incorporation of local foods.

The food service staff members have a high level of commitment for incorporating to local foods into the school lunch programs. Food service staff indicated that local foods come with an increase in labor, from cleaning and processing to making contacts and creating new recipes.

The food service staff survey can be separated into groups of questions. The first group of questions (1-6, 11, and 12) was asked to assess the attitudes of the food service

staff members regarding the increased labor and cost of procuring local foods. Question numbers 5 (Adding local foods to the school lunch menu will increase the cost of school lunch meals) and 11 (Preparing fresh fruits and vegetables takes too much time) ranked the lowest of this group, at 2.9 and 2.7, respectively. The rest of the questions in this group were ranked at 3.0 or above. The two most positive questions were numbers 1 (Incorporating local foods into the school lunch menu will be rewarding) and 2 (I encourage the use of local foods in schools), which were each given a rank of 4.3. Food service staff members believe they have the time and money to procure local foods, and they seem to support the idea as a whole.

The second group of questions (7-10) was asked to gauge the attitudes of the food service staff members towards the nutritional status of their student population. The questions regarding student acceptance of fresh fruits and vegetables were ranked at 2.4 for question 7 (Students in our school do not accept a variety of raw fruits) and 2.6 for question 8 (Students in our school do not accept a variety of raw vegetables). Questions 9 (Students in our school need to improve their food choices (nutrition)) and 10 (Local foods will add nutritional value to the lunch menu) ranked at 4.0 and 3.9, respectively. Food service staff members believed local foods would improve the nutrition of their student population, and they were confident that the students would accept them.

Question numbers 13 (More space is needed to prepare fresh foods) and 14 (More space is needed to store fresh foods) were ranked slightly more positive than neutral, at 3.4 and 3.8, respectively. The food service staff members were somewhat confident that they already had the space required to prepare and store fresh foods. Question numbers

15 (Using local fruits and vegetables provides safe foods for students) and 16 (Using local poultry and meats provides safe foods for students) were asked to determine the attitudes of the food service staff members towards the safety of local foods. They were ranked slightly above neutral; 3.6 for question 15 and 3.4 for question 16. This indicates that food service staff members are confident that local food will provide safe food for students.

Finally, questions 17 (The community is supportive of incorporating local foods into the school lunch menu) and 18 (Administration and teaching staff are supportive in incorporating local foods into the school lunch menu) were included to determine the attitudes of the food service staff members towards the support they receive from various entities. Both of these questions were ranked at 3.7, indicating that the food service staff members were somewhat confident that they had the support of the community, administration and educators.

A strong correlation was not found between age and score with the food service staff survey ($p = 0.14$). Therefore, I fail to reject the null hypothesis. No significant correlation was found for the food service staff survey for number of years working in food service or number of years working at current school with score ($p = 0.26$ and $p = 0.42$, respectively). This indicates that age, number of years working in food service, and number of years working in current school did not affect the attitudes of the food service staff members.

Results

Educator Survey

The educators at each school were given the opportunity to fill out an attitudes survey regarding the intake of local foods. The survey consisted of 17 questions, all with the option to answer strongly agree, agree, neutral, disagree, or strongly disagree. Table 9 represents the rank of each question on the educator survey. The rank refers to the average number answered for each question.

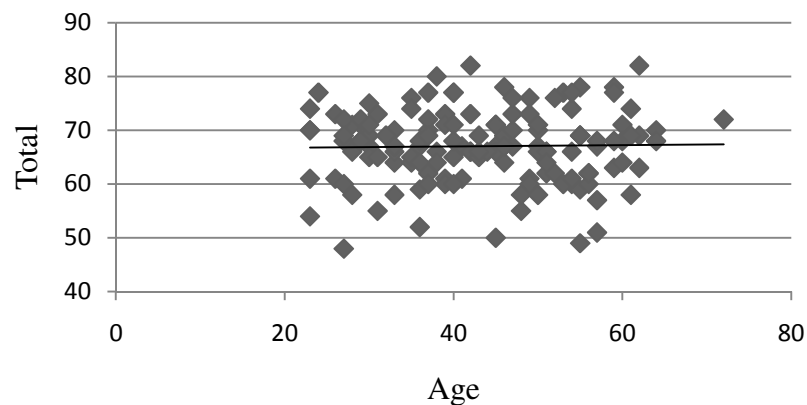
Table 9. Rank Scores of Educator Survey
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Rank¹

1. I encourage the use of local foods in schools	3.9
2. Incorporating local foods into the school lunch program will be healthy for students	4.4
3. Incorporating local foods into schools will be healthy for me	4.2
4. If local foods were brought to my school, I would take an active part in incorporating them into classroom activities	3.6
5. Students in my school do not accept a variety of raw fruits	2.6
6. Students in my school do not accept a variety of raw vegetables	2.8
7. Incorporating local foods into the classroom is something I would like to do	3.5
8. I enjoy hands-on learning activities in the classroom	4.5
9. Students in my classroom enjoy hands-on learning activities	4.7
10. Students in my school need to improve their food choices (nutrition)	4.3
11. If local foods were brought to my school, I would enjoy teaching lessons based around them	3.6
12. Bringing farmers into the classroom is a good way to show students where their food comes from	4.2
13. Students in my classroom would enjoy a field trip to a local farm	4.0
14. I can have an effect on childhood nutrition	4.1
15. I would encourage the planting of a school garden	4.0
16. The community is supportive of incorporating local foods into the school lunch program	3.7
17. Administrative staff is supportive in incorporating local foods into schools	3.9
¹ Scale: 5 = Strongly Agree; 4 = Agree; 3 = Neutral; 2 = Disagree; 1 = Strongly Disagree	

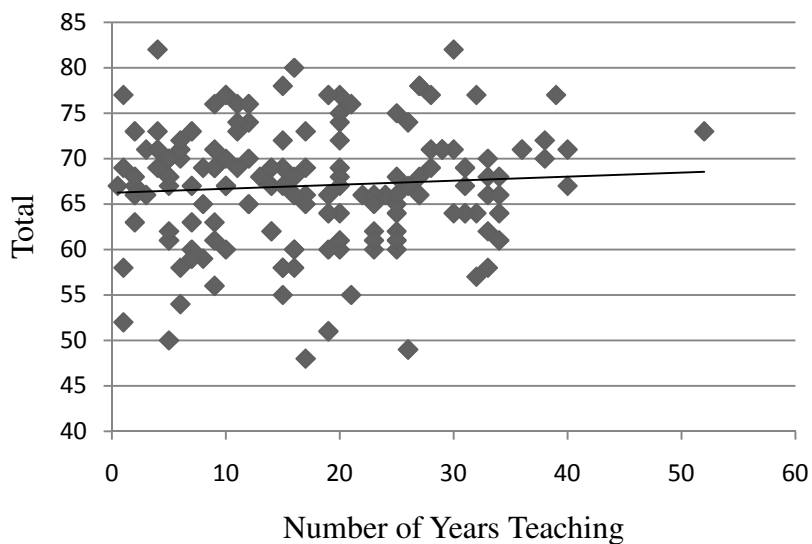
Figures 5, 6, 7, and 8 represent the correlations for total score compared to age, number of years teaching, number of years teaching at current school and grade teaching on the educator survey.

Figure 5. Scatter plot depicting the correlation between total score and age of educators.



$$p = 0.40, r^2 = 0.0004$$

Figure 6. Scatter plot depicting the correlation between total score and number of years teaching.



$$p = 0.19, r^2 = 0.005$$

Figure 7. Scatter plot depicting the correlation between total score and the number of years teaching at current school.

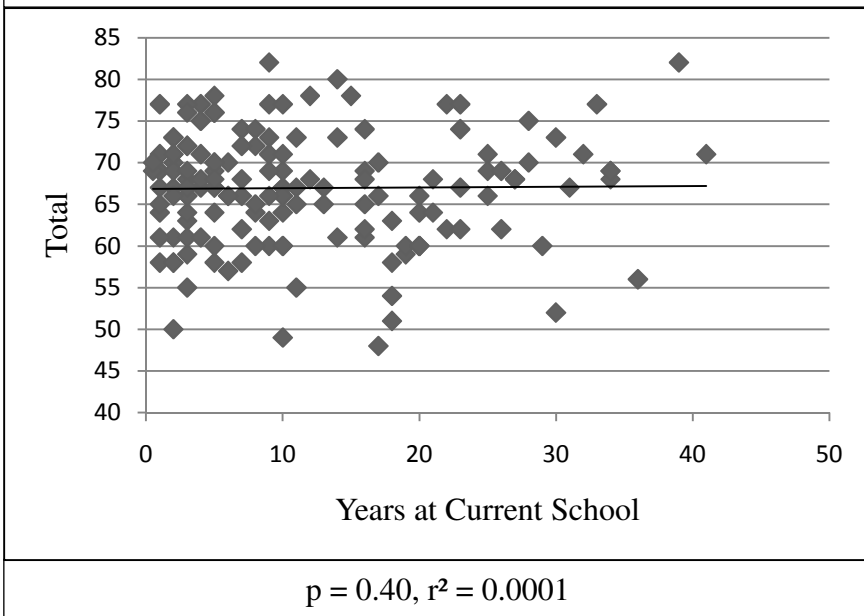
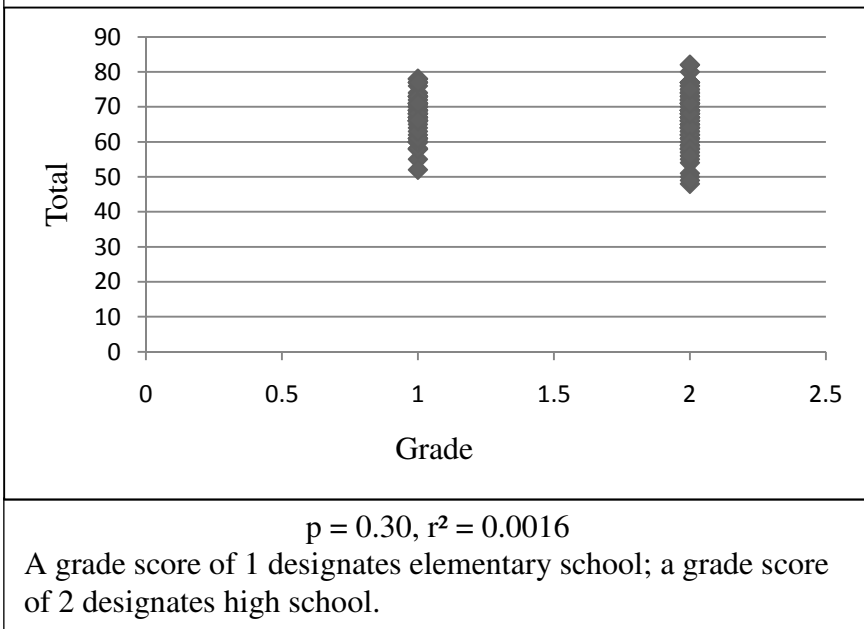


Figure 8. Scatter plot depicting the correlation between total score and the grade teaching.



Discussion

Educator Survey

The response rate for the educator survey was 47%. The average score on the educator survey was 79%. The purpose of this survey was to determine the attitudes towards Farm to School as well as the attitudes towards participation in Farm to School activities.

The questions on the educator survey can be sorted into groups. The first group of questions (1, 4, 7, 11-13 and 15) was created to determine the attitudes of educators towards participating in Farm to School activities. All of these questions were ranked above neutral, and ranged from 3.5 to 4.2. These ranks indicate that educators would encourage Farm to School activities in their classrooms. Question 7 (Incorporating local foods into the classroom is something I would like to do) was ranked the lowest of this group, at 3.5. There are certain subjects that are unable to incorporate local foods, such as musical education or physical/exercise education. This may have affected the rank of this question, as well as question 4 (If local foods were brought to my school, I would take an active part in incorporating them into classroom activities). Of all the questions in this group, numbers 4 and 7 were the only ones that indicated the participant would take an active role in the Farm to School program, rather than simply stating their support.

The second group of questions (2, 3, 5, 6, 10 and 14) addressed the attitudes of the educators towards student nutrition, as well as their own nutrition. The range of the ranks of these questions was wide, from 2.6 to 4.4. Number 5 (Students in my school do not accept a variety of raw fruits), which was ranked 2.6, and 6 (Students in my school do not

accept a variety of raw vegetables), which was ranked 2.8 indicate a positive attitude towards produce acceptance. All other questions were ranked above 4.0, which indicates that while educators are confident in the current health status of their students, and agreed that local foods would be healthy for the student population.

Question numbers 8 (I enjoy hands-on learning activities in the classroom) and 9 (Students in my classroom enjoy hands-on learning activities) were asked to assess the attitudes of educators toward hands-on activities. These questions were ranked at 4.5 and 4.7, respectively. Many activities involving Farm to School are hands-on; the educators were agreeable in that they and their students enjoy hands-on activities, which may indicate they would enjoy many Farm to School activities.

Finally, questions 16 and 17 were asked to determine the attitudes of the educators regarding the support of the program through the community and administration. Question 16 (The community is supportive of incorporating local foods into the school lunch program) was ranked at 3.7; question 17 (Administrative staff is supportive in incorporating local foods into schools) was ranked at 3.9. The educators are confident that the Farm to School Program has the support of the community and administration.

A significant correlation was not found on the educator survey when total score was compared to age (Figure 5. $p = 0.4$). Therefore, I fail to reject the null hypothesis. No significant correlations were found on the educator survey for number of years working, number of years working at current school or grade teaching when compared to total score ($p = 0.19$, $p = 0.44$, and $p = 0.31$, respectively). The total score on the educator

surveys was not influenced by the age of the educators, the number of years they had been teaching, the number of years they had been at their current school, or the grade they taught.

Results

Qualitative Survey Data

The surveys distributed to both the educators and food service staff included a comments section for the subjects to note any thoughts, feelings or ideas pertaining to Farm to School or the survey itself. The comments can be broken into four common themes: “Positive”, “How, when, why, where?”, “Self-realization”, and “Advice.” Table 10 illustrates these themes and the key phrases that characterize each theme.

Table 10. Survey Comments Evidence for Themes	
Themes	Evidence
Positive	<p>“I think this is a great idea!”</p> <p>“Locally grown foods are tastier than store bought foods. The ripening that happens in a truck transport does not enhance the flavor of fresher foods. Foods grown here can also benefit area residents who enjoy gardening.”</p> <p>“As the music teacher at my school, I probably wouldn't include food activities/lessons in my teaching. However, I think it's a great idea and so important to support the local economy.”</p>
How, when, why, where?	<p>“I think that a school garden would be great, but realistically no teacher would want to ‘volunteer’ their time to come out to the school over the summer to take care of it.”</p> <p>“Wondering how food is checked by food and drug admin.”</p>
Self-realization	<p>“I do not eat the food from the school cafeteria. I also do not spend time in the cafeteria when the students are eating. I don't feel I really have any knowledge about how well our students eat.”</p> <p>“I have no knowledge of this program and how it works.”</p>
Advice	<p>“Need to know suppliers to be sure of chemical used & if they have enough for all students.”</p> <p>“Students need to have more knowledge about food that is both healthy, appetizing and how to prepare it.”</p> <p>“Apples and melons are plentiful.”</p>

Positive

Positive comments came from both the educators and food service staff. Some comments were simple and to the point.

“It’s the best, safest, freshest you can buy!”

“Thanks for thinking of this.”

“I think this is a great idea!”

Other subjects were so supportive they had written why they should be doing this and what they think it will mean to the students.

“Locally grown foods are tastier than store bought foods. The ripening that happens in a truck transport does not enhance the flavor of fresher foods. Foods grown here can also benefit area residents who enjoy gardening.”

“As an FCS teacher, if local food was available I would love to use them. *Cost would be a big factor! I have a very strict budget!”

“I think it would be great to include local foods in the school. I am not sure if we would have enough local foods to support our school as we live in a smaller community. I think bringing farmers to the classroom would be effective.”

“Buying local FRESH foods for school use and consumption is a move in the right direction for improved health and wellness of our students. There are great rewards that come from growing your own food and all students could benefit from learning how to garden and preserve food for a healthier lifestyle.”

“We have the perfect set up for growing a substantial garden. It would be a great idea, in many ways for kids to see the entire process of growing tomatoes, squash, etc.”

A few subjects were supportive of the idea, but had no means to help educate students.

“As the music teacher at my school, I probably wouldn't include food activities/lessons in my teaching. However, I think it's a great idea and so important to support the local economy.”

“As a music specialist, the use of food in my classes is generally uncalled for, I teach more than 700 students making food activities prohibitive.”

“As a specialist I don't get the opportunity to work with kids in many areas outside reading, writing, & math.”

How, when, why, where?

Some survey respondents focused on the details of Farm to School, rather than the big picture. Because of this, they seemed to think it was an unrealistic idea.

“I think that a school garden would be great, but realistically no teacher would want to ‘volunteer’ their time to come out to the school over the summer to take care of it.”

While the idea of starting a Farm to School Program is to start small and build, there were some survey participants who may have interpreted the program as replacing most school food with local food.

“Most of our local foods are available (fresh) during late summer; I would like to see us support local farmers and purchase their fruits and veg's, but how far would that get us? I'd also like to see us purchase meat/poultry locally. Who's going to take care of a school garden?”

“Wondering how food is checked by food and drug admin.”

Self-realization

Many educators came to the conclusion that they really did not know what the cafeteria served, or if they knew what the cafeteria served they did not know whether or not the students ate what was being served to them.

“I do not eat the food from the school cafeteria. I also do not spend time in the cafeteria when the students are eating. I don't feel I really have any knowledge about how well our students eat.”

“I would like to see this happen. I do not have lunch room duty so I do not know how much fresh fruits and veggies are eaten. They are included on the menu.”

“I never eat school lunch so any changes to it would not affect me personally. But I am strongly in favor of buying local and organic.”

Others admitted that they did not know what the Farm to School Program is.

“I have no knowledge of this program and how it works.”

Advice

Several survey respondents seemed excited about the idea. Many indicated that they knew a farmer, were related to a farmer, or farmed themselves.

“My husband is a farmer (corn, wheat and soybeans) so this issue is close to my heart. We have a strong wellness program in place at our school so it would seem to complement what we already do.”

Advice was given on everything from what to buy to how the program should be run.

“Need to know suppliers to be sure of chemical used & if they have enough for all students.”

“I think fresh fruits and vegetables are more nutritional for our students however, the quantity brought in at one time needs to be manageable. It is a big waste if too much is brought in at once and then spoils because it is not used. Also, some foods would take too much time to prepare and cook. I think it would also be difficult to plan ahead with menus to use [because] there are many variables as to when the school would receive the produce. Overall, I think it is a good idea but am not sure it is feasible and cost effective.”

“Students need to have more knowledge about food that is both healthy, appetizing and how to prepare it.”

“Let's be prudent of our vendors, to ensure the quality of our incoming food products. We will be accepting the product liability exposure of those foods.”

“I'm an advocate of consuming locally grown foods. In our area, we are limited as to the variety of foods grown, especially during most parts of the school year. This is where an edible school garden would be beneficial. However, I would think schools would need to hire a ‘school edible garden coordinator’.”

“Apples and melons are plentiful.”

Discussion

Qualitative Survey Data

Most of the comments given on the surveys were supportive and positive in nature. The lowest scores on the food service staff surveys accompanied comments such

as “I think the fruit & veg program is a great idea if it is ran well. It needs to be a snack not a sample. Samples take way too much time to prepare. Time we don't have. We also need a variety of fruits & veggies not 3 or 4 over & over. Most students know an apple - orange - banana - carrots. We need to introduce fruits & vegs that are not the common household fruits. If we cannot afford to do these things financially then I am not in support of it,” and “There is more labor involved in making food from scratch. I am afraid that we won't be given the proper amount of labor hours needed to make more ‘from scratch’ meals” (the scores on these surveys were 52 and 54 out of 90 points, respectively).

Further, the comments that had the lowest scores on the educator surveys were comments that admitted a lack of understanding of either what Farm to School was or what their school’s lunch program served. The survey respondent who stated “I have no knowledge of this program or how it works,” scored 48 out of 85 points; the individual who commented “I do not eat the food from the school cafeteria. I also do not spend time in the cafeteria when the students are eating. I don't feel I really have any knowledge about how well our students eat,” scored 55 out of 85 points.

Summary

This study explored the attitudes of food service managers, their food service staff, and educators in Nebraska schools who were about to incorporate local foods into the school lunch program. This study also expanded its information through the advice and knowledge of the Director of Nutrition Services and the Farm to School Coordinator.

This cross-sectional design describes the attitudes of the food service staff members and educators about student nutrition, nutrition education, and willingness to participate in Farm to School activities. Several studies have cited the importance of a supportive community and school staff to the success of a Farm to School program (Bagdonis et al., 2009; Izumi et al., 2010; Nollen, et al., 2007).

The concerns of the Director of Nutrition Services and the Farm to School Coordinator were very similar to those voiced by the food service managers, as well as several studies (Gregoire, & Strohbehn, 2002; Izumi et al., 2010; Bagdonis et al., 2008; Izumi et al., 2006; Hardesty, 2008). Among the issues addressed were cost, seasonal availability, reliability, and lack of understanding between the farmers and the food service managers. All participants acknowledged that local foods came at a higher price than foods from a distributor.

The higher price was acknowledged by each group of participants in a different way. The Director of Nutrition Services and the Farm to School Coordinator both offered solutions to the cost of local foods. The Director of Nutrition Services also mentioned that most schools were unaware of the grants they could be receiving, which was reflected in the comments from the survey participants. Some of the participants who

were surveyed asked if the school could afford it, others posed the question of whether or not the extra cost was even worth it.

Even though some of the managers had not ironed out the details, they were willing to put cost aside for the sake of their students. If they had not found a way around the cost for the time being, they were determined to procure locally grown foods even if it meant extra man hours from them or driving to get it themselves. One manager had found the Fuel Up to Play 60 grant, which the Director of Nutrition Services mentioned as a great resource. The Farm to School Coordinator mentioned that most schools were not thinking small enough, and that what they had done thus far needed to be celebrated, “because what they’re doing in this realm of things is really huge.”

The food service managers and the Director of Nutrition Services both discussed their frustrations with the commodities program. The Director of Nutrition Services understood what was happening behind the scenes of the commodities program, but the change in management had not been communicated to food service managers.

The attitude surveys showed mixed and surprising results. Even though average score for the food service staff members was 61 out of 90, which meant they generally supported the use of local foods in school lunch (Farm to School Program), they still scored almost 11% lower on average than the educators. This could largely be due to the fact that the use of local foods (Farm to School Program) is much more effort on the part of the food service staff than it is for the educators. The educators have more of a choice of how much they participate in Farm to School. An educator could put in as little effort as putting up a poster in the classroom to planting a garden with his/her students. Food

service staff members, on the other hand, have to receive, process, and prepare the local foods, and may have to learn new skills to do so.

A few of the food service managers were confident that their food service staff members had the skills they needed already to process fresh produce. Other managers were unsure, because they neither had the equipment nor the confidence that their staff could handle a new way of processing. The questions addressing labor and space in the food service staff survey were all ranked around neutral, which indicates that some were, and others were not confident in their abilities and resources to introduce this program.

The Director of Nutrition Services addressed education, and discussed the nutrition curriculum that her office provided. Both of the survey populations, as well as the food service managers, agreed that there needed to be more nutrition education in the schools. One educator commented, “Students need to have more knowledge about food that is both healthy, appetizing and how to prepare it.” A food service manager observed by the way her students put their meals together that, “...a lot of them haven’t had that kind of education and that sort of thing to be able to get the idea and just because it’s on the salad bar does not make it a fruit or vegetable.”

Support for local foods (the Farm to School Program) was expressed in many different ways. Several comments from the surveys were positive, and many offered their direct support. The food service managers told several stories on the support they’ve received from the community garden, the high school principal, and educators willing to bring a local foods lesson into the classroom. The Farm to School Coordinator discussed

the phone calls she received from parents who wanted to participate, and the Director of Nutrition Services cited several possibilities from the state of Nebraska and the USDA.

The differences between these schools exemplify why starting the Farm to School Program is such a challenging process.

Limitations

Three of the four schools were very much aware of the Farm to School Initiative, and were ready to get started.

Food service managers should have been interviewed in more private settings. A second participant came into the interview area at one school, and at other schools, managers were hesitant to reveal certain information because they were near their staff or students.

There were 6.5% of educators and 14% of food service staff who did not report an age on their survey. The food service staff survey also had a high range of scores due to one respondent answering only six out of the 18 questions. Some of the “grades teaching” answers had to be thrown out because there were only elementary or high school options and some educators taught middle school or some mix of the three options.

Future Research and Direction

This study examined the attitudes of food service staff members, educators, and food service managers who were about to take part in the Farm to School Program. There is no indication in this study as to the success of any of the schools in procuring locally grown foods. Future research of these schools may be beneficial, and may indicate how the attitudes of food service workers and educators in each school affected its success with the Farm to School Program.

The research findings suggest that guidelines and/or a workshop should be held for food service managers on how to incorporate local foods into school food service. Information on procurement procedures, food safety, state and federal regulations, available funds, and willing participants should be incorporated into these guidelines and/or workshops.

Based on this study, to successfully develop a Farm to School Program (including local foods into the school lunch program), the following recommendations are encouraged:

1. Positive attitudes by food service workers.
2. Positive attitudes by educators.
3. Strong support of school administration.
4. Support of the community, including farmers, school board members, and parents.

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APPENDIX A: LETTER TO SUPERINTENDENTS

Dear X:

Recently we were funded from a USDA project (Rural Business Enterprise Grant – Farm to School Pilot) to work on Farm to School, a program that encourages schools to incorporate local foods into their food service program. The purpose of the program is to increase nutritional value and support the local economy.

Our research component will be to assess the willingness/readiness of school food service to incorporate local foods into the school lunch program. We will be working with four schools in Nebraska. We would like the opportunity to interview your food service staff as part of a thesis project. Specifically, we will do the following:

1. Conduct an interview with your food service manager about incorporating local foods into school food service.
2. Conduct a survey of school food service workers to evaluate attitudes toward the changes involved in incorporating local foods.
3. Conduct a survey of teachers about incorporating local foods into the school food service and the classroom.

The data collected from your school will be combined with data from other schools to ensure there is no way to identify each school. Once we have collected our data, other members of the Farm to School project will carry out the activities with your school.

As compensation, your school will be given about \$1,000 worth of new equipment for the school food service operations. In addition, the food service staff will be given a free food safety training session during 2011.

We would like to collect our data in November. Our project needs to be approved by the University of Nebraska-Lincoln committee that reviews projects involving human subjects. To have our project approved, we need a letter of support from your school system. We are attaching a draft of a letter for you to use in writing your letter on your school letterhead. You can send the letter by mail (address below) or email the letter to morgan.swisher@huskers.unl.edu

For more information, please contact either of us.

Sincerely,

Julie Albrecht

Morgan Swisher

APPENDIX B: SAMPLE REPLY LETTER

Dear Julie Albrecht and Morgan Swisher,

The _____ school system is willing to be a part of the project, Rural Business Enterprise Grant – Farm to School Pilot. We will allow Morgan Swisher and Dr. Julie Albrecht to interview the food service manager and conduct the survey of the food service staff and teachers at _____ School.

We understand that neither the school nor any participants will be identified in the study.

Sincerely,

Superintendent

APPENDIX C: FOOD SERVICE MANAGER INFORMED CONSENT



College of Education and Human Sciences
Department of Nutrition and Health Sciences

Informed Consent for Interview



Title of Project: Farm to School

Purpose of the research: The Farm to School Program is a program funded by the USDA. There is little research on how to implement it into a School Lunch Program.

Procedures: You have been recruited to take part in this study because your school will take part in the Farm to School Program. After you read and sign this consent form, you will be participating in a semi-structured interview about the Farm to School program. The interviewer, Morgan Swisher (University of Nebraska-Lincoln graduate student) will be asking a series of open-ended questions for you to respond. Your responses are important for the implementation of Farm to School at this location. It will take approximately 1-1 ½ hours to complete the interview. This interview will be taped and later transcribed for comparison to notes taken. Your name will not be linked to any information given during the interview. All data will be compiled and used for the development of the Farm to School Program.

Risks: There are no known risks associated with this study.

Benefits: The benefit of this study is for a smoother transition of local foods into this school.

Confidentiality: The information taken during this study will be strictly confidential. It will only be seen by the interviewer and the interviewer's advising professor. Your name will not be used in any reports or publications. The compiled information from all participants may be presented at a scientific meeting and/or published.

Compensation: Your school will receive approximately \$1,000 worth of equipment for the use of processing/receiving/ or storing the local foods.

Opportunity to Ask Questions: You may ask any questions about this study and have them answered before agreeing to participate in or during the study.

Consent: You are free to participate in this study or withdraw at any time without negatively affecting your relationship with the interviewer, researchers, or the University of Nebraska-Lincoln. Your decision will not result in loss of benefits. You are free to call the interviewer at any time. If you have concerns about the study, you may contact the University of Nebraska-Lincoln Institutional Review Board, telephone (402) 472-6965. By signing this form, you indicate that you have read and understood this form as presented and all questions have been answered. You will be given a copy of this consent form.

Signature of Participant_____
Signature of Participant_____
Date**Name and Phone Number of Researcher**_____
Julie A. Albrecht, Ph.D, PI
University of Nebraska-Lincoln
Office (402) 472-8884_____
Date**Name and Phone Number of Interviewer**_____
Morgan Swisher, Graduate Student
University of Nebraska-Lincoln
Cell Phone (402) 640-0528_____
Date

APPENDIX D: INFORMATIONAL INTERVIEW INFORMED CONSENT



College of Education and Human Sciences
Department of Nutrition and Health Sciences

Informed Consent



IRB# 20101111315 EX
Date Approved: 03/10/2011
Valid Until: 11/01/2011

Title of Project: Farm to School

Purpose of the research: The Farm to School Program is a program funded by the USDA. There is little research on how to implement it into a School Lunch Program.

Procedures: You have been recruited to take part in this study because your school uses local food products in your school lunch program; you receive and prepare the local produce that comes to your cafeteria. After you read and sign this consent form, you will be participating in a semi-structured interview about local foods. The interviewer, Morgan Swisher (University of Nebraska-Lincoln graduate student) will be asking a series of open-ended questions for you to respond. Your responses are important for the implementation of Farm to School at this location. It will take approximately 40-60 minutes to complete the interview. This interview will be taped and later transcribed for comparison to notes taken. Your name will not be linked to any information given during the interview. All data will be compiled and used for the development of the Farm to School Program.

Risks: There are no known risks associated with this study.

Benefits: Participants will be contributing valuable information that will be useful in future programming focused on incorporating local foods into the school lunch program.

Confidentiality: The information taken during this study will be strictly confidential. It will only be seen by the interviewer and the interviewer's advising professor. Your name will not be used in any reports or publications. The compiled information from all participants may be presented at a scientific meeting and/or published.

Consent: You may ask any questions about this study and have them answered before agreeing to participate in or during the study. You are free to participate in this study or withdraw at any time without negatively affecting your relationship with the interviewer, researchers, or the University of Nebraska-Lincoln. Your decision will not result in loss of benefits. You are free to call the interviewer at any time. If you have concerns about the study, you may contact the University of Nebraska-Lincoln's Institutional Review Board, telephone (402) 472-6965. By signing this form, you indicate that you have read and understood this form as presented and all questions have been answered. You will be given a copy of this consent form.

Sincerely,

Julie A. Albrecht, Ph.D., R.D.
Professor/ Extension Food Specialist
Department of Nutrition and Health Science
110 Ruth Leverton Hall / P.O. Box 830806 / Lincoln, NE 68583-0806 / (402) 472-3716 / Fax (402) 472-1587

Morgan Swisher
Graduate Student
Department of Nutrition and Health Science



Signature of Participant

Signature of Participant

Date

Name and Phone Number of Researcher

Julie A. Albrecht, Ph.D, PI
University of Nebraska-Lincoln
Office (402) 472-8884

Date

Name and Phone Number of Interviewer

Morgan Swisher, Graduate Student
University of Nebraska-Lincoln
Cell Phone (402) 640-0528

Date

APPENDIX E: FOOD SERVICE LETTER OF CONSENT



College of Education and Human Sciences
Department of Nutrition and Health Sciences

Dear food service employee,

Is student nutrition important to you? Your input is important to us!

You are selected to complete the Farm to School Survey for Food Service Employees because you are employed at a school interested in incorporating the Farm to School Program.

This survey will take about 20 minutes to complete.

We are conducting this survey for a research project. You must be 19 years old or older to participate. Your responses will be kept confidential and will be filed for two years before being discarded. All results will be compiled to keep your identity confidential. The results will be combined and published in scientific journals or presented at scientific meetings.

We strongly encourage you to complete this survey, though you are free to stop at any time and return the survey to us. Your participation is voluntary and there are no known risks for participating.

For participating in this study, your food service area will receive approximately \$1,000 worth of equipment to process local foods.

Completing this survey will indicate your consent to include your responses in our data. We ask that you return the survey within *10 days in the stamped addressed envelope* provided. Please try to complete all questions.

You may remove this page for your records. If you have any questions regarding the survey, please contact Dr. Julie Albrecht at 402-472-8884 (jalbrecht1@unl.edu), graduate student Morgan Swisher at 402-640-0528 (morgan.swisher@huskers.unl.edu), or the University of Nebraska-Lincoln Institutional Review Board at 402-472-6965.

Sincerely,

Julie A. Albrecht, Ph.D., R.D.
Professor/ Extension Food Specialist
Department of Nutrition and Health Science

Morgan Swisher
Graduate Student
Department of Nutrition and Health Science

APPENDIX F: FOOD SERVICE ATTITUDES SURVEY

Please circle the answer that best describes your feelings

SA = Strongly Agree A = Agree N = Neutral D = Disagree SD = Strongly Disagree

- | | |
|--|-------------|
| 1. Incorporating local foods into the school lunch menu will be rewarding | SA A N D SD |
| 2. I encourage the use of local foods in schools | SA A N D SD |
| 3. Adding local foods to the school lunch menu will add labor | SA A N D SD |
| 4. I enjoy opportunities to prepare menu items from scratch (homemade) | SA A N D SD |
| 5. Adding local foods to the school lunch menu will increase the cost of school lunch meals | SA A N D SD |
| 6. I enjoy learning new cooking skills and techniques | SA A N D SD |
| 7. Students in our school do not accept a variety of raw fruits | SA A N D SD |
| 8. Students in our school do not accept a variety of raw vegetables | SA A N D SD |
| 9. Students in our school need to improve their food choices (nutrition) | SA A N D SD |
| 10. Local foods will add nutritional value to the lunch menu | SA A N D SD |
| 11. Preparing fresh fruits and vegetables takes too much time | SA A N D SD |
| 12. Preparing foods from scratch (homemade) takes too much time | SA A N D SD |
| 13. More space is needed to prepare fresh foods | SA A N D SD |
| 14. More space is needed to store fresh foods | SA A N D SD |
| 15. Using local fruits and vegetables provides safe foods for students | SA A N D SD |
| 16. Using local poultry and meats provides safe foods for students | SA A N D SD |
| 17. The community is supportive of incorporating local foods into the school lunch menu | SA A N D SD |
| 18. Administration and teaching staff are supportive in incorporating local foods into the school lunch menu | SA A N D SD |

Please fill out the following information

I am ☐ Male
☐ Female

Number of years working in school foodservice _____ years

Number of years working in your current school _____ years

I would like to receive further training in: _____

Please write any comments you have regarding local foods:

APPENDIX G: EDUCATOR LETTER OF CONSENT



College of Education and Human Sciences
Department of Nutrition and Health Sciences

Dear educator,

Is student nutrition important to you? Your input is important to us!

You are selected to complete the Farm to School Survey for Educators because you are employed at a school interested in incorporating the Farm to School Program.

This survey will take about 20 minutes to complete.

We are conducting this survey for a research project. You must be 19 years old or older to participate. Your responses will be kept confidential and will be filed for two years before being discarded. All results will be compiled to keep your identity confidential. The results will be combined and published in scientific journals or presented at scientific meetings.

We strongly encourage you to complete this survey, though you are free to stop at any time and return the survey to us. Your participation is voluntary and there are no known risks for participating.

Completing this survey will indicate your consent to include your responses in our data. We ask that you return the survey within *10 days in the stamped addressed envelope* provided. Please try to complete all questions.

You may remove this page for your records. If you have any questions regarding the survey, please contact Dr. Julie Albrecht at 402-472-8884 (jalbrecht1@unl.edu), graduate student Morgan Swisher at 402-640-0528 (morgan.swisher@huskers.unl.edu), or the University of Nebraska-Lincoln Institutional Review Board at 402-472-6965.

Sincerely,

Julie A. Albrecht, Ph.D., R.D.
Professor/ Extension Food Specialist
Department of Nutrition and Health Science

Morgan Swisher
Graduate Student
Department of Nutrition and Health Science

APPENDIX H: EDUCATORS ATTITUDES SURVEY

Please circle the answer that best describes your feelings

SA = Strongly Agree A = Agree N = Neutral D = Disagree SD = Strongly Disagree

- | | |
|--|-------------|
| 1. I encourage the use of local foods in schools | SA A N D SD |
| 2. Incorporating local foods into the school lunch program will be healthy for students | SA A N D SD |
| 3. Incorporating local foods into schools will be healthy for me | SA A N D SD |
| 4. If local foods were brought to my school, I would take an active part in incorporating them into classroom activities | SA A N D SD |
| 5. Students in my school do not accept a variety of raw fruits | SA A N D SD |
| 6. Students in my school do not accept a variety of raw vegetables | SA A N D SD |
| 7. Incorporating local foods into the classroom is something I would like to do | SA A N D SD |
| 8. I enjoy hands-on learning activities in the classroom | SA A N D SD |
| 9. Students in my classroom enjoy hands-on learning activities | SA A N D SD |
| 10. Students in my school need to improve their food choices (nutrition) | SA A N D SD |
| 11. If local foods were brought to my school, I would enjoy teaching lessons based around them | SA A N D SD |
| 12. Bringing farmers into the classroom is a good way to show students where their food comes from | SA A N D SD |
| 13. Students in my classroom would enjoy a field trip to a local farm | SA A N D SD |
| 14. I can have an effect on childhood nutrition | SA A N D SD |
| 15. I would encourage the planting of a school garden | SA A N D SD |
| 16. The community is supportive of incorporating local foods into the school lunch program | SA A N D SD |
| 17. Administrative staff is supportive in incorporating local foods into schools | SA A N D SD |

Please fill out the following information

I am ☐ Male Number of years working in current school _____ years

☐ Female Number of years teaching _____ years

Age _____ years Grade currently teaching _____ elementary _____ secondary

OVER →

Please write any comments you have regarding local foods:
