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Understanding the Effectiveness of Farm to School Programs through Food Service Professionals

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Introduction

“Farm to School connects schools (K-12) and local farms with the objectives of serving healthy meals in school cafeterias, improving student nutrition, providing agriculture, health and nutrition education opportunities, and supporting local and regional farmers” (Farm to School, 2011).

Farm to School programs are garnering a significant amount of attention from the food policy, public health and local food movement communities for a myriad of reasons. There are currently an estimated 2,352 Farm to School programs in the U.S., a huge growth from the 400 that existed in 2004 (Farm to School, 2011). In addition, there are now 164 Farm to College programs (Farm to College, 2011) who are extending the reach of food environment improvements to the higher education community.

In Colorado, we have seen similar commitment by schools. In a survey conducted by the Colorado Farm to School Initiative, 41% of the 56 school districts surveyed currently had a program in place to purchase locally grown products direct from producers (Kathlene & Shepherd, 2011, p. 1). Many believe there

are some potential health outcomes that may come from encouraging better eating habits at the school level, so education and public health stakeholders hope to evaluate the potential linkages between wellness and school performance. The goal to increase access to healthy food in school lunch programs has been primarily driven by the belief that a healthier lunch will help encourage weight loss, teach healthy eating habits, and even aid in learning, particularly in some targeted districts where performance and student health indicators are causing concern.

In many cases, Farm to School programs have progressed beyond the initial inception and implementation phase, and into the stage where resources can be targeted at operational efficiency and growth in fresh produce procurement. In past years, research focused on issues of program adoption and best practices related to logistics of distribution and supply in the local food system. However, now that several programs that are operating, a necessary next step is to evaluate and assess the programs and their attainment of intended outcomes. This fact sheet will discuss the Northern Colorado Farm to School programs with a focus on how they are beginning to evaluate key mechanisms that both enhance and detract from reaching

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their goals. In order to do this, the evaluation research began with an assessment of observations and perspectives from food service professionals at the school sites. We chose this approach due to the fact that they might be the most involved in the day to day operations of the program and interaction with the students. Therefore, the primary objective here is use key informant feedback pertaining to the effectiveness of the Farm to School program as well as identify their implications for the stakeholders involved in these programs.

Background

For this work, we draw from two lines of research and outreach: projects focused on improving public health indicators through improved food access, and projects exploring the feasibility of Farm to School distribution programs. Some studies have shown that better access to grocery stores and healthier food in schools reduced obesity (Moore, Diez Roux, Nettleton, & Jacobs, Jr. 2008; Chomitz et al., 2010). So far, increasing access to fresh fruits and vegetables has been the primary tactic in reaching these goals and the Farm to School program has been utilized as a means to increase the prevalence of healthy food options. For example, the Know Your Farmer-Know Your Food and Let's Move initiatives have influenced the development of the School Lunch initiatives including Farm to School programs that are growing in Colorado and nationwide (Farm to School, 2011).

The such recent upsurge in the Farm to School movement means there are a limited set of resources and publications on the topic area. In fact, a search of literature reflects only a few publications that have surveyed and investigated important operational factors such as food service professional's perspectives (for citations see <http://www.davisfarmtoschool.org/>; e.g., Joshi & Beery, 2007). Although these publications provide an excellent foundation to understand the programs, there seems to be a void in research actually evaluating the effectiveness of the programs beyond their initiation and growth phases. The Farm-to-School program in the state of Colorado has transitioned past the development and planning phase, making the timing of evaluation ideal. It is incredibly important to gather information on current successes and challenges in order to achieve a strong foundation from which this program can grow.

Overview of Evaluation

In fall 2010, two school districts in the Northern Colorado region were identified as having fairly

well established and rapidly growing Farm to School programs that could be targeted for evaluation. All food service professionals at the elementary schools in each district that offered the program were asked to complete a questionnaire that evaluates perceived barriers and successes of their program. For the purposes of privacy, the school districts will not be named, but instead referred to as school district #1 and #2. School district #1 had 20 food service professionals complete the evaluative questionnaire, while district #2 had 31 responses. Due to the similarities of these districts and evaluation outcomes, the data from all 51 food service professionals was group together for analysis.

The goal of the questionnaire was to get general feedback directly after the Fall 2010 Farm to School season was over (the fall semester is the most active for procuring F2S products in Colorado). All food service professionals were given the short survey with a cover letter explaining the project and asking for participation on this non-mandatory survey. They were provided with the suggestion that they fill the questionnaire out at the beginning of a break or right after they get off work. All together the survey took less than 5 minutes to complete. The questionnaire was broken down into four main components: evaluation of overall program, operational efficiency, student attitudes and behavior, and benefits and barriers. The first three sections included statements that were rated on a 'level of agreement' scale, ranging from 1 'Strongly disagree' to 7 'strongly agree.' The four main four main components were:

1. The general program evaluation section focused on measuring the level of satisfaction with the program, the importance of their relationship with the farmer, and the effectiveness of the program. An example of a statement in this section was, "I believe this program will be a success."
2. The second section included statements related to operational issues, such as, "I feel like I understand what my role is with the introduction of the FTS program."
3. The third section included statements related to observed behavior and assumed attitudes of the students. For example, "Students are choosing the FTS produce when offered." This section was later followed up on with a question asking the food service professionals to estimate the percentage of students that are eating FTS produce, as well as produce in

general, through their observations working on the lunch line.

4. Finally, the last section was open-ended and asked for problems and benefits encountered with the FTS program thus far.

Evaluation Findings

1. Program Characteristics

Overall, the average agreement on the statement about the general attitudes towards the program was slightly positive (in Table 1, scores were above neutral (4) on a scale of 1 to 7). Of particular interest is the rating of each respondent’s personal perception of the program success (‘Success’) versus the perception of other food service professional’s satisfaction with the program (‘Other Satisfaction’). The reported belief that they think the program will be a success is significantly higher than their belief of others satisfaction with the program (but only 14% of the participants reported that the program will not be a success).

Other highly agreed upon aspects of the program included attitudes about the importance of the farmer relationship (M=5.43, SD=1.49), quality of the produce (M=5.19, SD=1.49), and outcomes of the program such as promoting nutrition (M=5.47, SD=1.64) and increasing menu variety (M=5.43, SD=1.25). Farm location did not seem to be important to the food service professionals that participated in the evaluation.

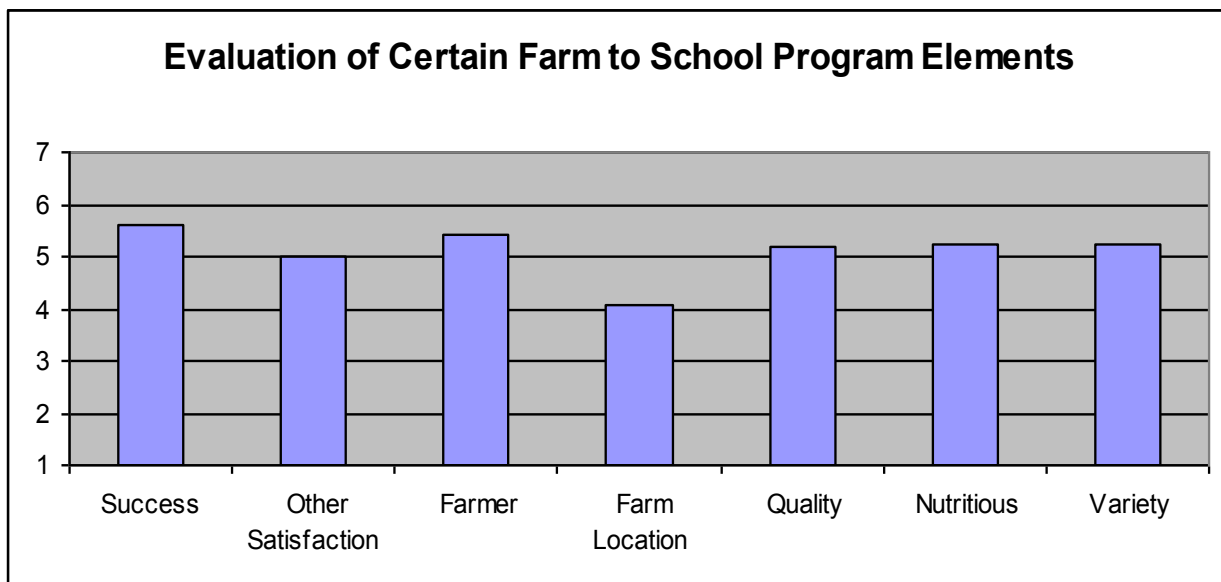
In order to understand the dynamics involved among various factors that influence perceptions of the F2S operational framework, a more advanced statistical analysis was completed. Figure 1 depicts the relative importance of program characteristics that were significant in explaining perceived success (from Table 1), with those that were most significant in explaining perceived success closer to the top.

Interestingly, the relationship to the farmer is considered important, but its relationship to perceived success is not as strong as the location of the farmer once we control for other factors. Therefore, having the farm produce from a certain location (i.e. local) is a better predictor of success of the program in the eyes of the food service professionals. On a different note, the fact that peer satisfaction is the strongest predictor of success is quite interesting and suggests that social influence and “community” confidence in the program might play a large role in the success of the program. Additionally, the belief that Farm to School promotes healthy behavior is also a key indicator of success of the program. This might be bolstered by teaching the food service professionals more about any proven health benefits of sourcing more local produce.

2. Current State of Program

In both school districts, the programs have been in place long enough to evaluate if the system was working by actually increasing the amount of

Table 1. Results of General Evaluation, Importance of Different Elements to Success of Program Rated 1-7 with 7 being the most important



vegetables consumed as well as allowing employees to identify factors that might influence the ability for new sourcing programs to run smoothly. To assess the current operational efficiencies in the program, five dimensions were evaluated in terms of levels of agreement with statements (Table 2).

Over half of those questioned (approx. 68%) believed that the program was running smoothly and provided increased access of produce to students (approx. 74%). Most food service professionals reported that the preparation of the FTS produce was not overly difficult, with only 10% believing it was much harder than they would like. Although only 26% of those sampled did find it semi-difficult, this is

important since labor is perceived as one of the most influential barriers to entry for Farm to School enterprises and commonly noted as a key factor to address for the success of other Farm to School programs. Among our respondents, stakeholder communication is also an area of possible improvement (M=4.06, SD=1.81).

Again, to understand the dynamics among factors, a more advanced statistical analysis was completed. The influence of preparation difficulty, respondents' understanding of their role, and stakeholder communication on a smoothly running program were all examined. When considering these operational factors as possible determinants to program success, both

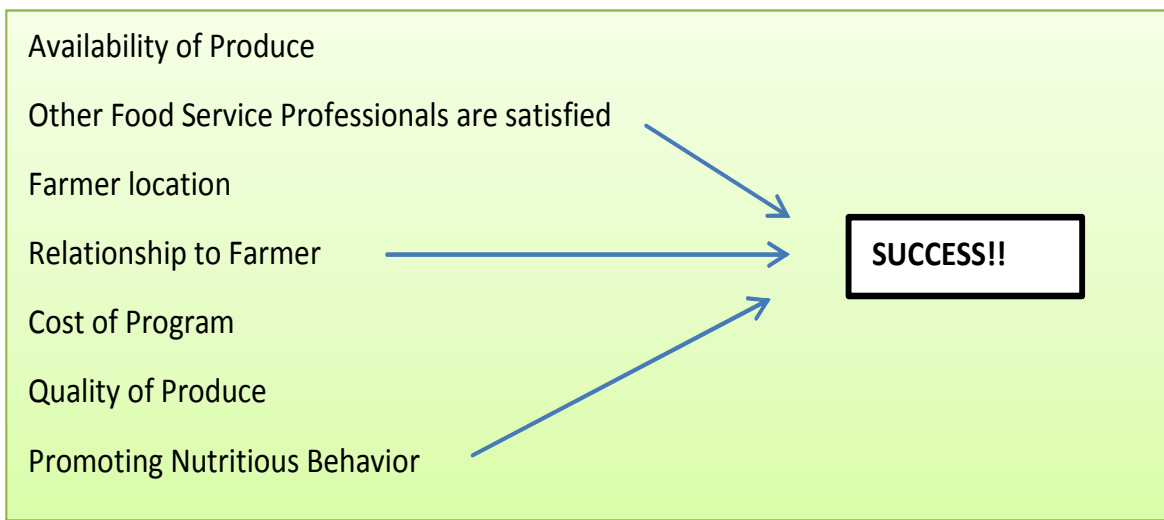
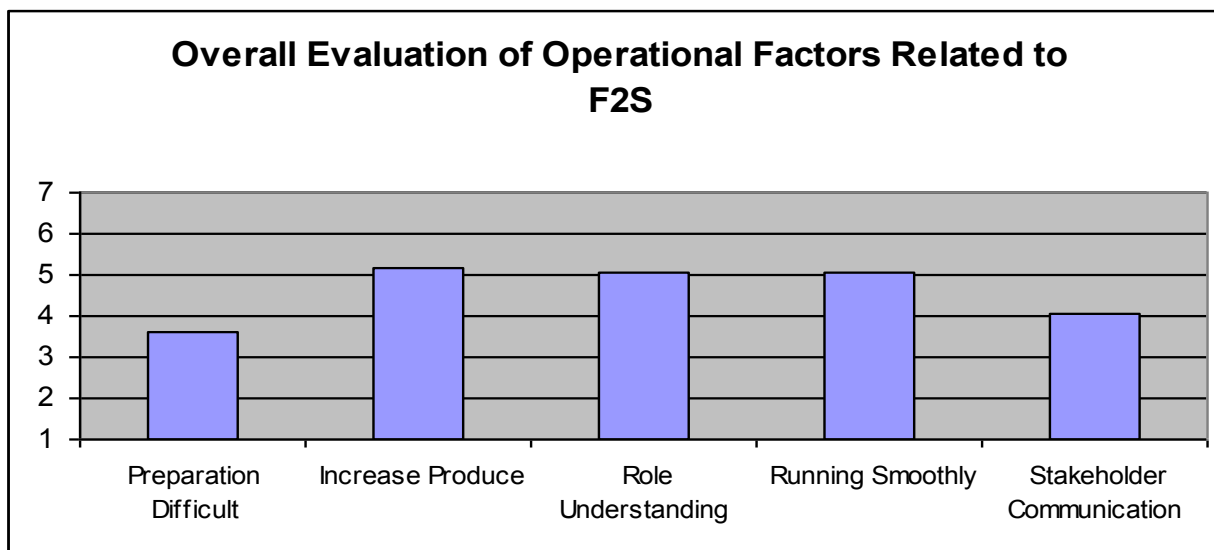


Figure 1. Key Factors of Success

Table 2. Operational Factors, Agreement on Success of Different Operational Elements Rated 1-7 with 7 being highest agreement



stakeholder communication and role understanding were the most significant predictors of program success. In other words, better communication between parties about roles in the program will be imperative to perceived success.

3. Observed Student Behaviors and Perceived Student Attitudes

Table 3 shows the average perception on student attitudes across food service professionals in both school districts.

Overall, the means are above a neutral score when we consider respondents' perceptions that students' hunger needs are being met ('needs' M=4.92), the students are satisfied with FTS produce ('satisfied' M=5.04), and they perceive students to be healthier with the introduction of farm produce ('healthier' M=5.24). And, their perceptions about whether students are choosing FTS produce ('choosing' M=4.88, matched with responses in Figure 2) suggest that there is positive evidence about achieving outcomes with student behavioral changes. Specifically, 27% of the food service professionals reported that between 71-90% of

Table 3. Perceived Student Outcomes, Agreement with Student Based Outcomes 1-7 with 7 being the highest level of agreement

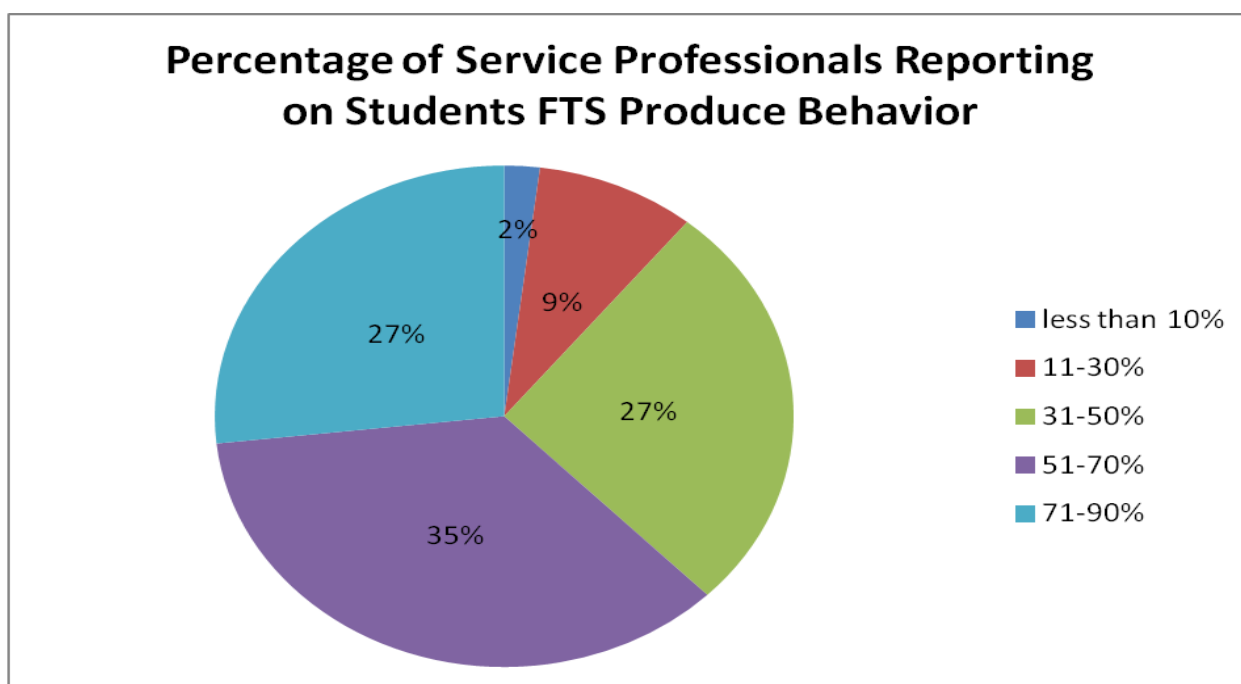
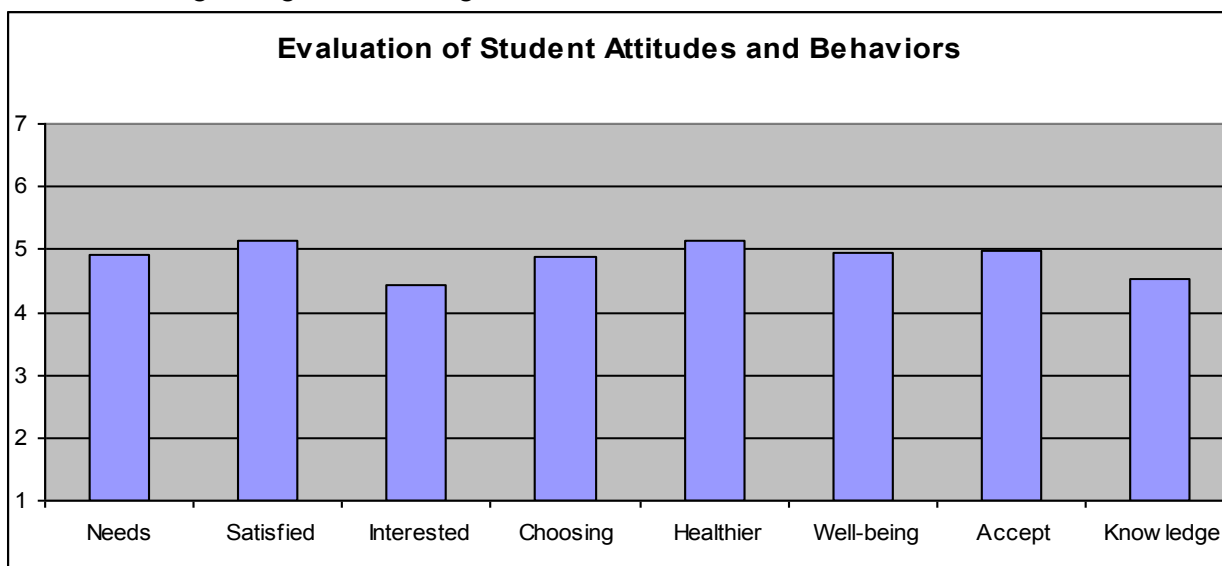


Figure 2. Student Behavior Related to FTS Program

students chose some FTS produce, and an even higher share (36%), reported that at least 51-70% of students chose FTS produce.

4. Identifying Barriers and Benefits

By allowing the food service professionals to fill in their own thoughts on benefits and barriers related to the F2S program, we were able to access a wider range of topics as well as make sure we were targeting the most salient issues. Surprisingly, Figure 3 shows that almost 70% of the responses involved issues related to the quality of the produce. In fact, general quality was the most mentioned barriers (37%) and cleanliness of produce was the second most mentioned

(32%). Perhaps the quality is not poor, just different from what one would traditionally see if acquired through a traditional wholesaler, or because more processed products are used, the fact few staff have seen raw agricultural products. Additionally, preparation was the third most reported barrier, and again, this may be related to the switch to more raw products that need cleaning, peeling, slicing or other steps not previously done in the school kitchens.

Figure 4 illustrates how potential program benefits were evaluated by food service professionals. The most commonly reported benefit was the fact that the FTS program was buying local produce, although our study's data does not allow for a more nuanced look at

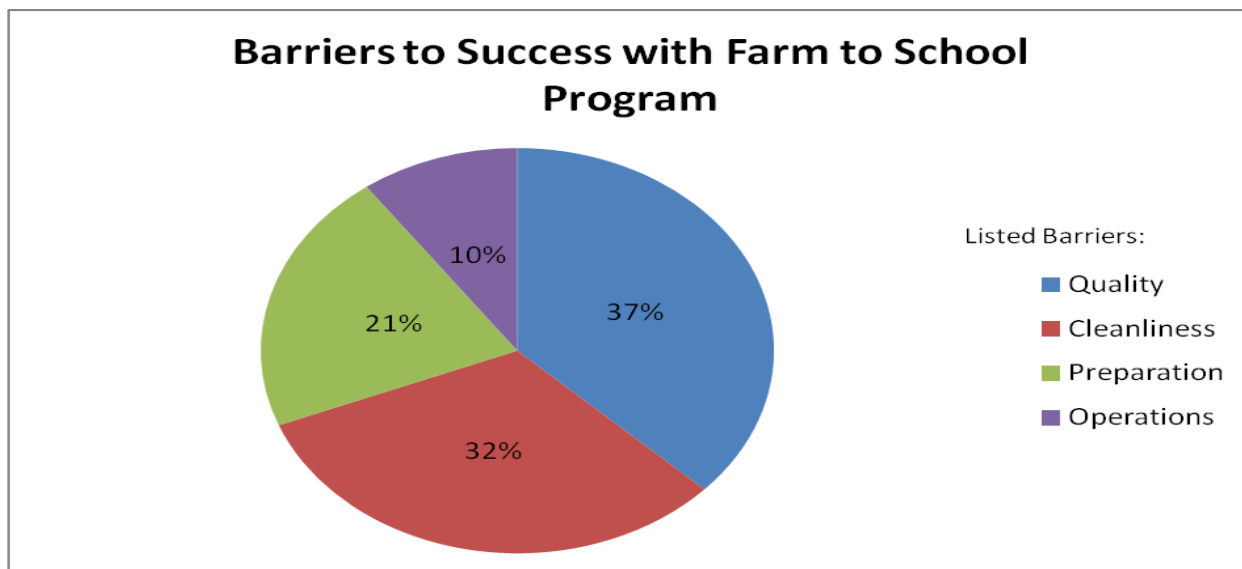


Figure 3. Food Service Professionals Reported Barriers to Success

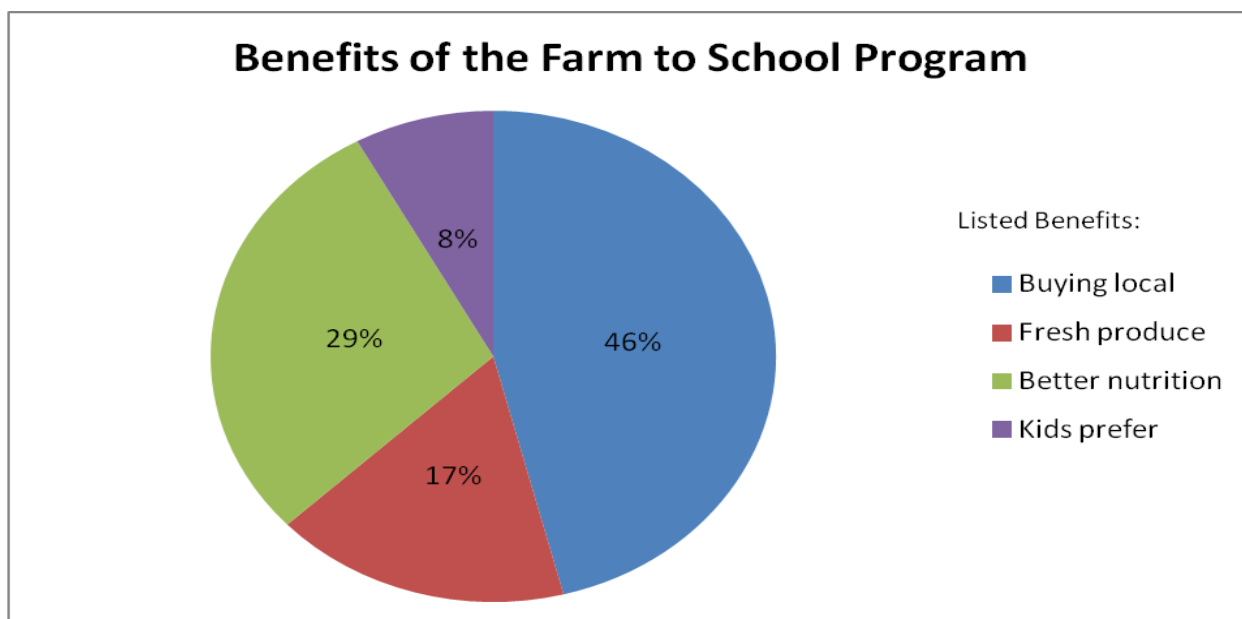


Figure 4. Food Service Professionals List of Reported Benefits

why local is considered a benefit to the respondents or the students. Another commonly cited benefit was better nutrition. It is encouraging that school food service staff see a potential health benefit in having the program in the school.

Conclusion

This study was intended to share perceptions and experiences from the initial years of Colorado Farm to School activities, with a particular focus of the perceived effectiveness of such programs in the eyes of one major stakeholder: the food service staff. Beyond providing a “school-eye view” of the program’s impact on employee attitudes and student participation, the evaluation of food service stakeholders in the farm-to-school programs may ultimately lead to the development of ‘best practices’ for other schools to support their programs.

References

- Chomitz, V. A., McGowan, R. J., Wendel, J. M., Williams, S. A., Cabral, H. J., King, S. E., et al. (2010). Healthy Living Cambridge Kids: A Community-based Participatory Effort to Promote Healthy Weight and Fitness. *Obesity, 18* (1s), S45-S53.
- Farm to College*. (2011). Retrieved 6 19, 2011, from Farm to College: <http://www.farmtocollege.org/survey#profiles>
- Farm to School*. (2011). Retrieved 6 19, 2011, from Farm to School: www.farmtoschool.org
- Kathlene, L., & Shepherd, J. (2011). *Colorado Farm to School Food Service Nutrition Directors 2010 Survey*. Center for Systems Integration.
- Moore, L. V., Diez Roux, A. V., Nettleton, J. A., & Jacobs, Jr., D. R. (2008). Associations of the Local Food Environment with Diet Quality—A Comparison of. *American Journal of Epidemiology, 167*(8), 917-924.