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Building Bridges Between Producers and Schools: The Role of Extension in the Farm to School Program

Abstract

Childhood obesity is one of the leading problems facing Americans today. As children continue to struggle with both obesity and food insecurity, many parents and doctors look to schools to be responsible for providing healthful meals. The aim of the Farm to School (F2S) program is to bring fresh, local produce into school cafeterias. Aligning with Extension goals, the F2S program provides an opportunity for both the development of healthful lifestyles and increases in agricultural profits. Through interviews with producers and school food service directors, we determined ways Extension programming can be used to improve the efficiency of the F2S program.

Keywords: [farm to school](#), [local food](#), [producers](#), [school food service](#)

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Introduction

Approximately 18.5% of children in the United States are obese (Hales, Carroll, Fryar, & Ogden, 2017). This obesity epidemic continues to grow exponentially due to insufficient nutrition and lack of activity (Go et al., 2013). While children's waistlines continue to grow, concerns surrounding food insecurity and hunger are becoming major threats to children's health in the United States. To combat both obesity and food insecurity among children, the U.S. Department of Agriculture established the national Farm to School (F2S) program in 2009 (U.S. Department of Agriculture Office of Communication, 2014). The idea behind F2S programming is that both children's health and local economies can be improved through the introduction of local food in school cafeterias and the delivery of related education (National Farm to School Network, n.d.-a). Schools participating in the F2S program purchase produce from local farms and provide educational opportunities via school gardens, cooking lessons, and farm field trips (National Farm to School Network, n.d.-b).

Previous research has indicated that logistics are a challenge in F2S endeavors. Ideally, application of the F2S concept should involve schools' procuring food directly from local producers, but as Guthman, Morris, and Allen (2006) have discussed, procurement is complex. Often, a middleman is needed for procurement to work effectively (Guthman et al., 2006). Cost is another documented challenge. Schools and other institutions that serve food to those vulnerable to food-borne illnesses must maintain higher food safety standards than other buyers (U.S. Food and Drug Administration, 2017). The costs associated with

implementing more intensive food safety practices on the farm can inhibit small-scale producers from participating in F2S programming (Berkenkamp, 2006; Izumi, Rostant, Moss, & Hamm, 2006; Vogt & Kaiser, 2006).

Involvement with the F2S movement makes sense for Extension. For example, University of Florida Extension F2S programming is intended to meet strategic priority goals such as empowering individuals and families to build healthful lifestyles and increasing the profitability of agricultural enterprises (Irani, 2012). Moreover, Extension professionals from varied program areas—agriculture, community development, family and health sciences, youth development—all can play roles in the F2S movement. Despite the seemingly logical fit of F2S programming, Benson (2014) found that although Extension professionals had interest in exploring and supporting F2S activities, their involvement in such endeavors did not align with that expressed interest. Lack of experience with F2S efforts separated those who expressed interest in F2S initiatives and those involved in such initiatives (Benson, 2014). Therefore, identifying the needs of those involved in the F2S program can provide Extension professionals insight regarding potential trainings and outreach strategies that can enhance the F2S program.

We undertook a study to identify perceived barriers and potential enhancements related to the Florida F2S program from the perspectives of producers and school food service directors (SFSDs). Our intent was to help clarify the role of Extension in F2S efforts and inform the incorporation of F2S initiatives into Extension programming across the country.

Methods

We sought as participants both producers and SFSDs involved in the F2S program and those not yet involved in the F2S program. The participants were to represent various geographic locations throughout Florida as determined by Extension districts. We first identified potential participants according to the said criteria for the population (Dooley, 2007). Next, we chose a group of producers representing various types of crops grown across Florida and SFSDs representing Florida school districts of various sizes and demographic makeups. We used snowball sampling, whereby we asked recruited participants to name additional potential participants who met the selection criteria (Dooley, 2007). We stopped recruiting participants when "new data repeat[ed] what was expressed in previous data," indicating a point of saturation (Saunders et al., 2018, p. 1897).

We conducted semistructured interviews to collect data. The use of interviews allowed us to "understand the social actor's experience and perspective" (Lindlof & Taylor, 2017, p. 173). We interviewed a total of five producers and seven SFSDs. We gathered preliminary data on the occupations of the participants, (e.g., what produce they grew, the sizes of their school districts), and we used an interview guide with initial questions about local food to build rapport (Birks, Chapman, & Francis, 2007; Gaskell & Bauer, 2000; Kreuger, 2002). The interview guide then focused on questions to meet the study objectives (Gaskell & Bauer, 2000). At the end of each interview, we summarized the conversation and asked the interviewee to confirm and verify the summary, thereby applying member checking (Kreuger, 2002).

Data collection occurred between September 2013 and May 2014. We audio recorded and transcribed verbatim all the interviews (Guest, Bunce, & Johnson, 2006). We compared the interview data with transcripts, handwritten notes, and audio recording for triangulation. Our principal researcher analyzed the transcripts and performed constant comparative analysis (Guest et al., 2006). The principal researcher also

kept an audit trail, detailing theme formation and definitions, thus increasing confirmability and dependability of the results (MacQueen, McLellan, Kay, & Milstein, 1998). Analysis included open coding, followed by axial coding and, lastly, selective coding (Strauss & Corbin, 2008). Our principal researcher discussed the audit trail and final themes with the rest of the team to ensure accuracy and trustworthiness (Creswell, 2007; Erlandson, Harris, Skipper, & Allen, 1993). We assigned pseudonyms to each participant for participant confidentiality before data analysis. The principal researcher and one coresearcher were graduate students studying agricultural communications who had previously been trained in qualitative data collection and analysis. The other coresearcher was an assistant professor in agricultural communications.

Limitations

We acknowledge the limitations of our study, including the small number of interview participants and the types of commodities produced by the farmers in the study. We chose to conduct interviews because we were undertaking an exploratory study with our objective being to understand the baseline perceptions of the benefits and barriers of the F2S program. Although there are constraints on generalizability beyond Florida, the findings may be useful for those incorporating F2S efforts in other states.

Findings

Tables 1 and 2 display interviewees' background information relevant to participation in the F2S program. We made efforts to select participants from diverse operations. In one school district, three SFSDs participated in the interview. The participating producers represented different regions of the state, different crops, and different statuses in the F2S program. The SFSDs represented diversity in location and size of school district.

Table 1.
Description of Producers

Participant pseudonym	Location	Crops grown
Ethan	Central	Blueberries, pomegranates, and peaches
Joe	Northeast	Produce and citrus
Melody	South central	Blueberries and peaches
Phil	Central	Potatoes
Tyler	Northwest	Satsuma oranges

Table 2.
Description of School Food Service Directors

Participant pseudonym(s)	Location	Students in district	Program status
Angie	Northwest	34,000	Participating
Emma	Northeast	9,500	Participating
Janet	South central	200,000	Participating
Sarah	South central	43,000	Participating
Tiffany, Becky, and Haley	South	181,000	Participating

Producers' Perceived Barriers

We asked the producers to identify the barriers they faced when working with the F2S program. Three major themes were identified: distribution challenges, limited produce, and food safety requirements.

Distribution Challenges

Many producers discussed the expense and labor of delivering produce to schools. "Tyler" was unable to deliver food to multiple schools. He said, "I can't afford to go to one school and another school and deliver two boxes here and two boxes here. It's not feasible." "Joe" was surprised by the intensity of the labor. He said, "If we had warning about how labor intensive it is to deliver to all those schools, that might have helped. It can be overwhelming when you are responsible for delivery."

Limited Produce

Producers found that selling produce to schools was not as profitable as selling to other market outlets, with some small-scale farmers being unable to provide a reliable and long-term supply to meet school needs. "Phil" said, "The amount of produce schools require doesn't ever amount to anything. It's not much for producers to consider selling."

Producers rely on distributors for the distribution of produce. However, the producers interviewed indicated that distributors are not interested in handling small quantities of produce. Tyler explained that distributors want larger amounts of product to fill their trucks. He said, "When we contact a broker, they want to know how many semi loads we have. I probably have five, six semi loads. . . . They are talking about 40, 50, 100, 200 semi loads."

Food Safety Requirements

Higher standards for food safety maintained by schools created a barrier that kept many of the producers from participating in the F2S program. Joe expressed his discontent with the food safety inspection requirements for schools: "If my Extension agent comes out here and knows that I have good agriculture practices, that should be enough for my produce to qualify for school safety requirements." Phil discussed the prohibitive costs of food safety inspections for small farmers, saying, "Schools require a tremendous amount of insurance and different safety requirements that would not be cost effective for various producers [to execute]."

Producers' Suggested Enhancements

We asked producers what could be done to enhance the F2S program and to facilitate the transition for producers entering the program. Four themes emerged: cooperatives, efficient communication, school access, and education.

Cooperatives

Working in cooperatives, or co-ops, would allow producers, especially small-scale producers, to share responsibilities and lower costs. Being involved in a co-op gives producers the opportunity to supplement one another's products, purchase supplies collectively, and fill in for members' crop failures. Tyler said, "The way to go is through co-ops. We are losing out by not all combining and having a central location to carry our product and sell the product for us. We could also get into brokers if our produce was all combined because then we would have the number of semi loads to interest a broker." "Melody," who was considering participating in the F2S program, said, "Cooperatives can help on a lot of levels. In a co-op, you can trade equipment and maybe even boxes. You just got to work together."

Efficient Communication

Producers noted that better communication between producers and the schools would lead to mutual understanding of concerns. Better communication was critical, they emphasized, especially when an immediate opportunity for buying or selling arose. Tyler explained that a middleman should connect the producers to the schools, saying, "What is missing is that person who knows the farmer and knows the school, to be able to match them up."

School Access

Producers discussed the difficulty of getting their product into schools. Because producers did not have sufficient knowledge or resources to initiate conversations or contracts, they suggested that school personnel should initiate contact with them. "Ethan" believed F2S was a good program, but he wanted SFSDs to select farms and say "you are the selected farmers for the F2S program in Putman County." Tyler also identified the need for help. He said, "To help farmers get into the schools is where the help is needed. Once I'm in there, you can leave me alone; we'll get along fine."

Education

Producers discussed the limited knowledge school personnel had about their work. Educating school personnel about farming by hosting field trips or speaking in the classroom could build trust and understanding between producers and schools. Joe said, "Educating schools about producers' work would help them have faith in what we do in that they're getting something healthy and safe." Ethan also wanted to help the school districts understand farm processes. He said, "We would like to teach teachers what goes on on the farms. It should be in the education system."

SFSDs' Perceived Barriers

SFSDs discussed barriers they had faced associated with the F2S program. Four themes emerged: cost, inconvenience, perishability, and lack of communication.

Cost

Purchasing fresh food costs schools more than purchasing other forms, such as frozen or canned food. "Janet" explained, "I have got to balance it with cost. Fresh green beans are about 32 cents a portion; my commodity frozen green beans are around 9 cents." As well, "Becky" said, "When we evaluate the cost of the

fresh produce, it's much more expensive than the frozen or canned item. Cost is a huge barrier."

Inconvenience

The modern school food system has been set up to serve students in a quick and convenient manner and includes the use of precut and prepackaged food items. "Tiffany" discussed the challenges of getting a product straight from the farm. She said, "These smaller farms wouldn't be able to package the produce the way that we [want] it. We don't get product coming in that's not cleaned or packaged the way we want. We used to [receive] cases of lettuce, [and we had to] clean it and cut it ourselves, but now we want value-added product that [is] already chopped for us. Farmers that do not offer the type of convenience the schools are looking for [will find it] hard to sell their products to the schools." The SFSDs explained that the convenience-based processes used in schools do not require employees to know how to work with fresh produce.

Perishability

Fresh food requires storing and handling processes that differ from those used for canned or frozen food. Therefore, the perishability of fresh food makes storage more challenging. Tiffany explained, "The shelf life for fresh food is short. If you are looking at frozen food, you can store that for a long time. Fresh you can't." "Sarah" said, "When you're dealing with produce, the big challenge is you've got to get it out to the schools in a timely manner, or it's rotten."

Lack of Communication

SFSDs repeatedly identified a lack of communication across schools, producers, and other stakeholders. Sarah said, "Making contact with the local farmers is not easy because we don't know who they are. The local farmers don't know how we do business." "Haley" addressed a misunderstanding stakeholders had about school food service staff because of a lack of communication. She said, "The relationships with stakeholders require clarifying our responsibilities and our capabilities."

SFSDs' Suggested Enhancements

We asked SFSDs what could be done to enhance the F2S program and to facilitate a better transition of entities into the program. The themes emerging from this discussion included distributor support, improved communication, and education.

Distributor Support

Many SFSDs expressed the need to have more distributors involved in the school food business. Janet explained the barrier associated with perceptions of produce distributors, saying, "I wish more of the produce vendors would see us as a viable business segment that they would want to compete for and that could be a steady business for them."

Improved Communication

SFSDs repeatedly mentioned the importance of designating a "middleman" who would understand both school business and the producers' businesses as well as the distribution process. They suggested that a middleman could be a distributor who would conduct communications between SFSDs and producers or another type of individual who could communicate across SFSDs, producers, and distributors. "Angie" said, "It's important not to leave our distributor out because he's the middleman here. I don't want to deal directly with the farmers. The distributor is the one who makes sure that the produce has been grown properly and been handled properly." Additionally, Sarah said, "Perhaps, we need someone else doing one-on-one conversation with my produce distributor. It would be helpful."

Education

SFSDs discussed the necessity of producers' understanding school business to enhance the F2S program. Sarah said, "We need to put together F2S meetings and invite local growers to educate them about our business and how we need them to do business." "Emma" shared a similar thought: "Educating farmers on how school business works would enhance the program. Getting the producers familiarized with how school business works and how the contracts are set up would be helpful too."

Conclusions and Discussion

For the purpose of understanding how F2S programming could be enhanced in Florida, we interviewed producers and SFSDs to identify the main barriers they had faced related to participation in the F2S program. Both producers and SFSDs identified cost as a main barrier prohibiting them from participating. For producers, the cost of addressing school food safety requirements was prohibitive. This finding aligns with previous studies of F2S programs in Michigan and California (Berkenkamp, 2006; Izumi et al., 2006; Vogt & Kaiser, 2006). Producers in our study believed their profits would be minimal due to the added costs of implementing food safety procedures. Our interviews also revealed the perception that small- to mid-scale producers would have difficulty sustaining the amount of produce required for schools on a day-to-day basis. This finding resonates with results of a similar study conducted in Minnesota (Berkenkamp, 2006). Furthermore, participants expressed the need to improve communication between the groups and the need for each group to educate the other about their businesses and thus enhance the effectiveness of the F2S program. Although existing literature has not specifically recommended educating both parties as a solution, several studies have indicated the benefit of a middleman to keep both parties informed (Buckley, Conner, Matts, & Hamm, 2013; South Carolina Food Policy Council, 2011). However, adding a middleman adds costs, and conflicts with the ideal direct-local-procurement component of the F2S initiative (Guthman et al., 2006). In this case, a "middleman" could be a distributor, a co-op, or an Extension agent who could facilitate communication between producers and SFSDs.

Recommendations

The F2S program allows for a collaboration between local producers and school systems, and it provides a new opportunity for Extension. To develop effective F2S-related Extension programming, Extension professionals should explore how to improve communication between producers and schools. Nonformal education through Extension can facilitate knowledge and opinion exchange. Inviting producers to schools and inviting SFSDs to farms, as part of Extension programming, could provide opportunities for communication about procurement and business procedures, discussion of concerns, and establishment of

mutual understanding.

Extension also may play a role in creating relevant nonformal training programs. For producers, educational programming could relate to preparing for and participating in higher levels of food safety evaluations and requirements. Another opportunity lies in educating small-scale producers on how to create a cooperative that would allow them to combine yields to sell products to schools in larger quantities. For SFSDs, Extension could develop educational programs focused on the use of fresh products in school food preparation. These educational programs could focus on food safety, cutting and preparation techniques, storage and handling, and food preservation.

Both groups in our study indicated a lack of knowledge about how to make connections to get started in the F2S program. To connect producers and schools, Extension professionals could assist by keeping a list of producers and schools within a county that may be interested in participating in the program. Promotional materials explaining F2S policies and procedures, how to get involved in the F2S program, and F2S tips and tricks also could provide basic information to producers and SFSDs.

Additionally, those working in program areas across Extension could learn from the challenges and successes of F2S initiatives and apply new knowledge to related programmatic areas. The F2S program is unique in that it naturally offers a collaborative environment in which different types of Extension agents can engage. Collaborative teams of family and consumer science, 4-H, agriculture, and horticulture agents should be formed to work on F2S programming.

We sought to identify our study participants' thoughts and perceptions regarding the Florida F2S program. The qualitative nature of the study allowed for exploratory research; however, researchers conducting future studies should aim to solidify perceptions across a state through survey items. Further, once Extension programming has been implemented in an area, program evaluators should implement pretest/posttest study designs to understand how attitudes and knowledge change as a result of Extension programming.

Author Notes

Author affiliations have changed since the study reported herein was conducted. Shuyang Qu is an assistant professor of agricultural communication in the Department of Agricultural Education and Studies at Iowa State University. Laura Fischer is an assistant professor in the Department of Integrated Strategic Communication at the University of Kentucky. Joy Rumble is an assistant professor in the Department of Agricultural Communication, Education, and Leadership at The Ohio State University.

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