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# Flipped Programs: Traditional Agricultural Education in Non-Traditional Programs

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**Abstract**

*In this collective case study, we described three agricultural education programs that challenge stereotypes of agricultural education in urban settings. We observed and interviewed teachers in different environments and, in many cases, while working with students. Observations were made in classrooms and laboratories at secondary schools, in livestock barns, greenhouses, and vineyards on school farms. We explored the reciprocal relationship between personal, behavioral, and environmental determinants of social cognitive theory within and among components of the total agricultural education program model. In each program, all three components of the total agricultural education program model were being implemented using a combination of activities and curriculum that would often be considered traditional content. According to teachers, agriculture was a novel, captivating topic for students. Students' lack of familiarity with production agriculture provided opportunities for students to experience something new.*

**Keywords:** education; social cognitive theory; agriculture; traditional; non-traditional; urban; rural; case study; engagement; three-component model

## Introduction

Engaging students in the learning process is a widely noted topic in educational literature, especially in the areas of educational psychology and instructional design. Researchers have widely studied engagement by testing and/or observing multiple dimensions, including elements of cognition, emotion, and behavior (Brodie, Hollebeek, Jurić, & Illić, 2011). Also, researchers have focused on situational conditions and environments believed to increase student engagement. Although researchers have conceptualized and/or theorized numerous interrelated connections between teaching and learning, none of the connections have been widely reported to be universal effective (Bryson & Hand, 2007). However, many researchers agree that environment and the learning process cannot be treated as though they exist separately.

Several researchers have emphasized the utility and appropriateness of agricultural education to provide relatable contexts for teaching core content (Wooten, Rayfield, & Moore, 2013; Foster, Rice, Foster, & Barrick, 2014) to diverse students (Niehaus, 2008), while often drawing on the conceptual basis of the three-component model: classroom and laboratory

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instruction, supervised agricultural experience (SAE), and FFA (National FFA Organization, 2014; Talbert, Vaughn, Croom & Lee, 2014).

### Traditional agricultural education

In agricultural education literature, traditional agricultural education has been described as providing students opportunities to acquire and increase skills and knowledge in areas including "…livestock fitting and showing, FFA, and agriculture mechanical practices" (Stewart, Antonenko, Robinson, & Mwavita, 2013, p. 157). Additionally, researchers have also described how agriculture has served as a contextual conduit for engaging students in core courses, including math and science. In one case (Niehaus, 2008), science teachers in New York City redeveloped core science courses into courses taught using the context of agriculture (i.e., botany into plant science, and zoology into animal science). In recent literature, researchers appear to suggest a shift to new or innovative (non-traditional) curriculum (Niehaus, 2008) that emphasizes or, at a minimum, integrates chemistry and biological sciences (Henry, Talbert, & Morris, 2014) is necessary. Redevelopments or modifications to integrate agriculture into core courses, as well as science, technology, engineering, and mathematics (STEM) into agricultural education courses (Wooten et al., 2013), appears to have challenged how traditional agricultural education has been defined.

Conversely, some researchers have broadly, yet consistently, described non-traditional programs as urban or diverse—in both enrollment (Lawrence, Rayfield, Moore, & Outley, 2013) and curriculum (Robinson, Kelsey, & Terry, 2013). Additionally, emphasis placed on the challenges of urban programs is widely noted in the literature, including poverty, fragmented family structures, English proficiency, large school sizes, and neglected facilities (Warner & Washburn, 2009). Much of the literature related to defining programs has described the characteristics of the educational setting (Robinson et al., 2013) and learning environment (Entwistle, 1991) in a relatively broad sense (e.g., classroom and/or laboratory). Additionally, characteristics of programs have been tied to traditional programs in rural settings and non-traditional programs in urban settings. A more expansive understanding of traditional and non-traditional programs could influence curriculum decisions beyond rural and urban labels.

## Conceptual Framework

More than 11,000 teachers nationwide facilitate agricultural education programs with the guidance of a total program model (TPM) for agricultural education (also referred to as the three-component model) that includes classroom and laboratory instruction, supervised agricultural experience (SAE), and FFA (National FFA Organization, 2014; Talbert, Vaughn, Croom & Lee, 2014; see figure 1). In conceptualizing this study, we assumed each of the three elements of the TPM should exist in each secondary agricultural education program. However, we believed a more complex or granular examination of teachers and programs could be beneficial. Therefore, we chose to draw on Bandura's (1986) social cognitive theory (SCT; see figure 1) to understand interactions between people, environments, and behavior.

The three determinants of SCT (personal, environmental, and behavioral) form a triadic, reciprocal model that can be used to examine personal influences (including teacher self-efficacy, background, high school agriculture experience, gender, and type of certification), behavioral determinants (including courses taught, interaction with students, and daily chapter activities) and environmental determinants (including size of program, number of teachers, community expectations, and geographic location).

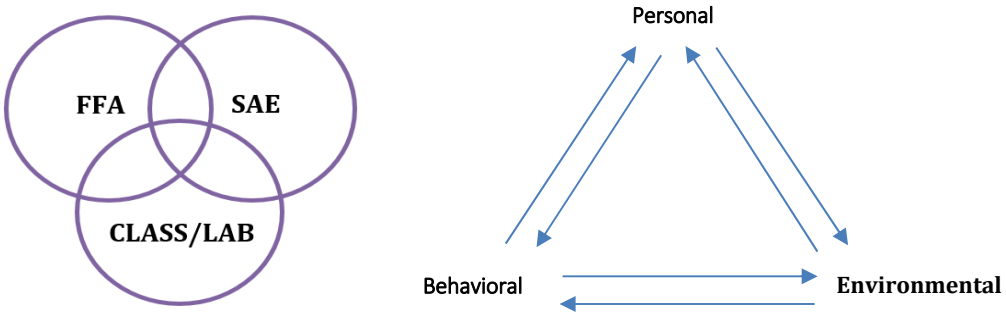


*Figure 1*. The total program model of agricultural education (Croom, 2008) and Bandura's (1986) SCT used to examine programs.

We initially approached this study by examining teachers and programs with social cognitive theory and the three-component program separately, however, our conceptual framework evolved as new insights emerged. To gain a deeper understanding, we not only explored the reciprocal relationship between people, environments, and behavior, but those relationships within and among each component of the three-component model (see figure 2). Although social cognitive theory is typically presented as a theoretical model, it was approached as a conceptual model for this study to understand agriculture teachers and programs in a multi-dimensional way (see figure 2).

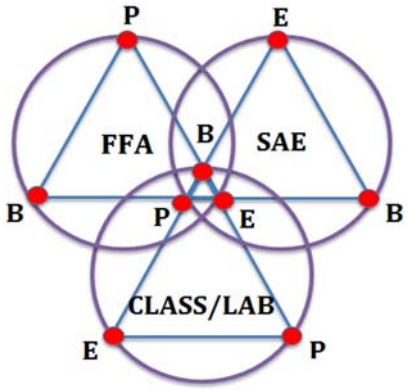


*Figure 2*. Conceptual model of reciprocal relationships between determinants (personal, behavioral, and environmental) of SCT (Bandura, 1986) within each element of the TPM of agricultural education (National FFA Organization, 2014; Talbert, Vaughn, Croom & Lee, 2014).

## Method

Well-constructed case studies gain a holistic and robust understanding of phenomenon in relation to a specific environment or context (Stake, 2013; Yin, 2003; Creswell, 2008; Patton 2009). This study originally pursued a much broader and expansive case study to compare and contrast secondary agricultural education programs. However, analytic insights and interpretations emerged during data collection, which shifted the focus of our research. This shift—while unsettling to us—signaled a new understanding of the data and challenged our perceptions of rural and urban programs. Therefore, this collective case study described the three agricultural education programs that provided an in-depth understanding of the emergent phenomenon.

Additionally, a literature review was conducted simultaneously with field data collection, "permitting a creative interplay among the processes of data collection, literature review, and researcher introspection" (Patton, 2009, p. 226).

## Case Selection

Thirty-two agriculture programs were originally contacted via email to participate in the larger study. Programs were contacted because of their proximity (within 100 miles) to the pre-determined route of a six-week field experience in the southwestern United States. Of the thirty-two contacted, fifteen programs of varied size, scope, and geographic location agreed to participate in the larger study.

The three agriculture programs included in this study varied by size, student demographics and number of teachers (two-, three-, or four-teacher programs) (see table 1). According to descriptions found in the literature, each would be considered an urban program, and therefore serve as exemplars of the phenomena of study.

Table 1

*Description of Agriculture Programs*

| Program | Number of Teachers | Total Student Population | Student Demographics |
|---|---|---|---|
| Northside | 2 | 1,700 | 56% Hispanic |
| | | | 38% African American |
| | | | 4% Asian |
| | | | 2% Other |
| Calico Springs | 5 | 3,100 | 71% Hispanic |
| | | | 16% African American |
| | | | 9% White |
| | | | 4% Other |
| San Gabriel | 3 | 2,000 | 64% Hispanic |
| | | | 23% White |
| | | | 9% Asian |
| | | | 4% Other |

## Observations, Interviews, and Introspection

Case studies should take place in real-world settings, during real-world situations for pertinent social and environmental conditions to be available for observation (Yin, 2014). Thus, we

observed and interviewed teachers in several different environments and, in most cases, while working with students. Observations and interviews were conducted in classrooms and laboratories of secondary schools, in livestock barns, greenhouses, and vineyards on school farms.

Unstructured and semi-structured interviews were conducted following an open-ended protocol, allowing our research team the flexibility to explore specific topics brought up during the interview process (Rubin & Rubin, 1995). Interview questions were developed to explore the relationship between determinants of social cognitive theory. Interviews lasted between one and two hours and were video and audio recorded to allow an additional indirect observer to analyze the responses and ensure trustworthiness of data (Lincoln & Guba, 1986).

To increase the transferability of data collected (Yin, 2014), observations and interviews were conducted in the presence of three researchers. Our team represented various perspectives in agricultural education and allowed cases to be viewed through the independent lenses of a former agriculture teacher and two former students, one of which is the daughter of a former agriculture teacher and current administrator. Our varying levels of experience in agricultural education provided valuable knowledge and insight during data collection (Stake, 1995).

Field journals were used to take detailed notes and provide more credibility to the research process (Denzin & Lincoln, 2009). To increase the transferability of our data and allow others to make judgements about the degree of fit, example quotes accompanied the use of thick, rich description (Lincoln & Guba, 1986). Additionally, we used reflexive journaling and introspection to help understand our own experiences and allow the impressions and feelings of teachers and programs to be used as data. Peer-debriefing helped uncover imprints of each case beyond what could be recorded in our most detailed field notes (Lincoln & Guba, 1986; Patton, 2009).

Follow-up communications included handwritten notes sent via the U.S. Postal Service and member checks via e-mail. Pseudonyms for both teachers and programs were used to protect the identity of each participant involved in the study.

## Limitations

The nature of the collective case study calls for understanding a phenomenon across multiple settings, but findings may not be generalizable to the larger population. Findings represent three cases, but are offered as exemplars to build theory in future research.

There were many advantages to conducting data collection during a six-week field experience, but limitations as well. Due to our schedule, observations and interviews were bound to one or two days. More in-depth data over time might provide insight into the way programs function on a daily basis.

## Data Analysis

According to Merriam (1988), "data collection and analysis is a simultaneous activity in qualitative research" (p.151). To make sense of a large quantity of data, we independently coded field notes, videos, and pictures from each interview during and after data collection (Patton, 2009; Maxwell, 2013). Peer debriefing was used following each observation and interview to discuss data, procedures and draw out emergent themes (Creswell, 2008). Data was also discussed with four former agriculture teachers and one faculty member that were not present during collection. Preliminary categories were created to understand the factors of people, behaviors, and environments within the three-component model, but found that all components of SCT were

present within each component of the TPM. As we began to make sense of the data, we determined the TPM best represented the contradiction of traditional programs in non-traditional/urban settings.

## Case Descriptions

To accurately reflect the complexities of individual programs and provide an in-depth illustration, each case will first be presented independently in subsections using verisimilitude—a literary strategy that captures the researchers' thinking processes and realistically conveys the intricacies of the experiences—thereby, enabling readers to reconstruct the experiences for themselves (Creswell, 2008). Cases will then be compared to the literature in terms of Classroom Instruction, Supervised Agricultural Experience, and FFA.

### San Gabriel High School

San Gabriel, a three-teacher program, offers courses in animal science, horticulture, and agricultural mechanics to more than 500 students. Teachers provide students with hands-on instruction in three classrooms, one greenhouse, a livestock barn, a poultry barn, agricultural mechanics laboratory, a pasture, and a garden.

We visited San Gabriel High School on a weekday afternoon in July. This large, non-descript high school was settled in a "concrete jungle" between business and industry. Mr. Hudson, the principal, met us in the parking lot and took us on an extensive journey through campus. We were surprised to find a large, green pasture and livestock barn when we reached what Hudson referred to as the "farm area" at the back of campus. Before delivering us to the agriculture teacher, Hudson introduced us to students in the agricultural mechanics laboratory and livestock barn that seemed to be staged for our arrival. Mr. Steven Katling, his teaching partners, and the vice principal greeted us in their matching polos and starched khakis with breakfast in Katling's classroom. We chatted over bagels and orange juice before our interview and got to know more about Katling's background:

> I went to high school here but grew up on a dairy in a different community. I was in 4-H but we didn't have an ag program at my high school, so my parents let me transfer here. I was the farmhand for a few years before I went to college for ag ed and lucky to come back home to work with my ag teacher for a few years…We continue to grow but otherwise, not much has changed since then.

Steven described his approach to classroom instruction as "hands-on" and an "extension of the real world:"

> I believe students learn best when the classroom and farm are linked. We don't just go out to the farm for no reason. We have a specific application of concepts taught in the classroom…The farm makes classroom content concrete; it's an eye-opening experience that they've never had before…I could be in the middle of teaching kids how to light an oxyacetylene torch when an animal gets sick on the farm. That animal doesn't wait for the bell to ring; I have to use that as a teachable moment. In any other classroom, you would push on to the state test—not here—that animal is now the most critical lesson of the day.

When explaining how he engages students in curriculum, Steven explained a scenario that reminded us of other programs:

> I think we have an advantage in this environment because these kids have never seen [agriculture], they've never touched it, they've never done any of it; we have a captivated audience. Students in rural communities have seen it, they've grown up with it. So what's the hook?

Steven was eager to tell us about the SAE program at San Gabriel and claimed that he would "put it up against any model in the country:"

> Our SAE program gives every student the opportunity to engage, regardless of cost. Our school district manages a $180,000 account that about 90% of students take loans from to purchase animals and feed. It's not about the haves or have-nots anymore. It's what I'm most proud of.

San Gabriel has more than 450 FFA members and teachers who express pride in their FFA chapter. However, Steven acknowledges the social nature of their chapter and expresses a concern for strengthening their leadership activities. He also sees involvement as community and skill development and values "service over banners:"

> We spend a lot of time figuring out our students' talents and finding FFA activities that fit those talents so they can be successful. We don't train teams for the sake of winning, but more for the experience of learning how to take skills from the classroom out into the world.

We concluded our interview with Steven by walking out to the livestock barn where he introduced us to one of his students, Jenna, and her father, Tim. Jenna was wearing black skinny jeans and pink converse sneakers but pulling her steer around the barn as if she were in Wranglers and boots. She was bubbly, outgoing, and more than willing to tell us about her animal. She even pulled out her flip-phone before we left to show us a few photos from her first livestock exhibit the week before.

**Northside High School**

Northside, a two-teacher program, offers courses in agricultural science, animal science, veterinary medicine, and agricultural mechanics to more than 200 students. Teachers provide students with hands-on instruction in two classrooms, two livestock barns, a poultry barn, a veterinary medicine laboratory, and an agricultural mechanics laboratory.

We arrived at Northside High School on a weekday morning in August, just days before the school year began. We approached the school and were met by a school resource officer who asked us for our identification before proceeding into the building. We emptied our pockets and sent our bags through the x-ray machine just before Ms. Kara Wilson-Green greeted us at the entrance. Her big smile and starched camouflage button-up shirt made us feel a little more comfortable as we followed her through a maze of freshly painted hallways to her classroom. We spent a few minutes chatting about the long list of to-dos that accompanied the arrival of a new "crop" of students in a few short days while she toured us around the veterinary science and agricultural mechanics laboratories. Ms. Wilson-Green seemed excited to show us around her program and made us feel right at home.

We began with brief introductions before asking questions from our protocol. She initially described herself as the non-traditional agriculture student:

> I grew up in the ward—a low-income part of [the city]—but went to school in another area, where I was introduced to ag… I wanted to be involved and finally talked my mom into helping me get my first lamb. His name was Waylon. I fell in love with him; I fell in love with ag.
>
> I was the only Black member of my FFA chapter, but never really saw it as an issue; I liked being different. Now that I think about it, it kinda all makes sense. I used to grow peas on my porch, my mom was a florist, and I wanted to be a vet. I guess I always had a connection with ag… I'm just a city slicker who loves agriculture.

It was clear Kara's experiences influenced the way she approached her program as a teacher and that living in the city was the only non-traditional part of her upbringing. Kara explained her approach to classroom instruction as "rigorous" and "honest:"

> Students who have problems in other areas thrive in my classroom. We hold them to high standards and provide structure they don't get in other places. We're real. We tell the truth, and I believe they really respond to that.
>
> When asked where her students learn best, she said,
>
> I feel students learn best on a continuum. I spend time in the classroom providing context and the basics but then allow them to touch the curriculum outside in our barn or on a field trip… I have a supportive CTE director who makes sure we can take trips and have the materials we need. He is an absolute joy to work with.

Kara mentioned that every student in her program has an SAE project, but sometimes there are barriers to implementing many projects because of the resources students have at home and a "disconnect between the community and the classroom." When asked about the types of SAE projects students take part in, Kara explained most of her students had traditional livestock projects. "I wish we had more diverse or non-traditional SAEs, but I can't get my kids interested in those areas. They want a steer, lamb, or pig." She also mentioned almost every SAE project was kept on campus in the livestock facility.

Northside, a newly chartered FFA Chapter, has 62 members. Kara believes this component of her program is slowly growing:

> Because our program is so young (established in 2012), we have to spend a lot of time creating community alliances… I wish we had more of an alumni base. My students' parents were never a part of agricultural education and sometimes it's difficult for them to make the connection…Our approach is very traditional; we're a traditional program without traditional roots.

Kara beamed as she talked about her chapter officers and the students who have really taken hold of FFA activities:

> My kids are looking for leadership opportunities to do more. We take part in CDEs but we don't train teams; teams are a manifestation of what we teach in our

> classrooms. We are looking forward to the next few years—success breeds success.

We wrapped up our interview by walking through the livestock barns and looking through dozens of pictures of Kara and her students in the classroom and at FFA activities. It reminded us of our own programs and the family we experienced in agricultural education.

**Calico Springs High School**

Calico Springs, a four-teacher program, offers courses in agricultural science, horticulture, agricultural mechanics, and viticulture to more than 500 students. Teachers provide students with hands-on instruction in four classrooms, two greenhouses, a garden, a vineyard, a land-lab, an agricultural mechanics laboratory, and a livestock barn.

We visited Calico Springs High School on a weekday morning, during summer school. We were mentally prepared for the intense desert heat but not the shear enormity of this outdoor campus. Palm trees, chain link fences, and graffiti immediately caught our attention—it was obvious this was unlike any school we had visited before. A few teachers met us at the front desk (not exactly the armed security guards and metal detectors we expected) and pointed us in the approximate direction. Although we had planned to sit down with Ms. Melissa Jacobs for an interview, we found her in a little mobile classroom with students enrolled in a credit-recovery course. Forty teenage boys were packed-in like sardines behind computers with the windows and door wide open; the heat was unbearable. With a quick handshake and hello, she beckoned one of her "ag kids," Phillip, from the back of the classroom, threw him a heavy key ring, and asked him to give us the "grand tour."

Phillip was a little shy at first but quickly warmed up to the idea of getting to leave class. He led us across campus to a chain link fence that spanned the perimeter of the agriculture program area. Once behind that gate, we stepped off what seemed like a Hollywood movie set and onto the school vineyard—an unexpected sight after our trek through campus. Phillip showed us around the livestock barn and greenhouses while answering a cadre of questions about the program and facilities. However, when asked about certain pieces of equipment or FFA activities he responded, "I don't really know, Ms. Jacobs won't let me take that class until I pass my core classes… I really want one of those blue jackets but I have to get my grades up first." As we continued the tour, we encountered a few locked gates that he could not find the right key to open. He was very bothered that he couldn't show us everything. We could tell Phillip was proud to be a part of the agriculture program.

As Phillip led us back across campus, we prepared to thank Ms. Jacobs and leave so we would not further disrupt her class, but she was more than willing to talk to us while her students worked independently. She knelt-down outside the open door of her classroom and began to tell us about herself. We were a bit distracted by her visible tattoos and piercings, but soon found her jovial, motherly disposition to be reminiscent of agriculture teachers we had met before.

> I grew up on a five-acre farm and wasn't too excited about the chores that went along with that lifestyle… I was in ag and FFA—wanted to be a vet… My ag teacher told me I would probably be good at this [teaching agriculture]. I told him I didn't like people. He said, well try it anyway. I did and it stuck. I love this job; we get paid to play. We get paid to learn on a daily basis.

Melissa described her classroom as "engaging" and "application-based:"

> The more I can get them out [of the classroom] the better…I'd say we spend between 25 and 30 percent of our time in the classroom, in terms of lecture, we have a lot of discussion, Socratic seminars, and labs. I can't really take microscopes to the greenhouse, although if I can find a way, I might… Everything is hands-on.

When asked about how she keeps students interested in curriculum, she emphasized the way students get wrapped up in learning new concepts they have had little interaction with before.

> Freshmen kids put a tiny seed in a pot—they've never seen anything grow and to me that's unimaginable. It's unimaginable to have never seen anything grow at all—ever. Then they watch that little seed start to break the surface—that's wonderful.
>
> [My teaching partner] has an ag mechanics class that always has a wait list. Everybody wants to take ag mech—it's not a dumping ground like in other places.

Melissa explained that their approach to SAE helped retain students in the program:

> Our chapter has a cooperative approach [to SAE]; every student has a project and they are all part of the chapter cooperative. Every kid has gotten into it; it's helped with our retention rate.

She further explained that most SAEs take place on campus, where students can access resources they may not have at home. The livestock barn, vineyard, garden, and greenhouses are central to many students' success in SAE.

FFA activities at Calico Springs focus on community service and career development. While students do participate in FFA activities beyond the chapter level, Melissa wanted us to understand that "her boys" need job skills they can use to help support their families.

> What our FFA chapter does may be different than what state and national consider CDE's. We concentrate on career development. Our approach is based on our community and what they need. Our community needs us to teach them how to feed themselves.

The bell rang and concluded our conversation, and then Melissa agreed to show us around a bit more. We followed close behind her as she pushed through a crowd of students while throwing high-fives and occasionally stopping for hugs.

We were drawn to the way Melissa interacted with her students and seamlessly ran her classroom, while also being completely engaged in our conversation. What seemed like a rough bunch of kids replied to her questions with a level of respect we would have hoped to have in our own classrooms and her voice softened when she called them by name. She was tough and tender at different times, and then sometimes both at once. We chuckled earlier when Melissa described herself as her students' "worst nightmare and biggest cheerleader," but we later found her depiction to be spot-on.

## Collective Case Summary

The teachers in each of the three schools included in this study considered their agriculture programs to be traditional; however, all three schools were thriving in urban areas.

Although, at first glance, the programs in this study appeared to be non-traditional, based on geographic location, size, and student demographics, a closer look led us to believe that the programs were no different than what we had previously encountered in more traditional settings. Agriculture teachers, their behaviors, and the learning environments created by each program challenged our assumptions of non-traditional agricultural education and required us to dig deeper into the literature to understand the factors that contribute to these widely-accepted definitions. The three-component model served as a structure to understand findings alongside conflicts in literature.

### Classroom and Laboratory Instruction

In each program, each of the three components of the TPM were being implemented using a combination of activities and curriculum that would be considered traditional content according to the literature. Cases included in this study were successfully implementing traditional curriculum and activities, including production animal science, horticulture, agricultural mechanics, and viticulture. When discussing the traditional nature of the curriculum, one teacher even described his urban students as a "captivated audience." Therefore, some urban agricultural education programs may still be successful, relevant, and engaging when focusing on traditional content. This finding does not align with the findings presented by Henry et al. (2014), who suggested urban students may not be accepting of content provided to them in the context of agriculture. Henry et al. (2014) suggested emphasizing sciences to attract urban students, especially biology and chemistry. Similarly, Russell and Trede (1999) suggested curriculum that emphasized current industry needs, including business, leadership, management, computers, and personal development. The lack of agreement in the literature (Russell & Trede, 1999; Henry et al., 2014) with the findings of this study should not be unexpected. Warner and Washburn (2007) reported that findings varied among teachers in their study.

### Supervised Agricultural Experience

Non-traditional programs, which are often associated with urban, diverse, low-income schools, often face challenges to implementing successful SAE programs, including low parental participation, inadequate facilities, and outside support (Warner & Washburn, 2009). The programs included in this study were located in urban, diverse, and in some cases low-income schools that were not reflective of the issues summarized by Warner and Washburn (2009). SAE was the most emphasized component in each of the three programs included in this study. Production livestock SAEs were among the most popular SAEs in each of the three programs, despite the lack of farms and/or production livestock operations in close proximity to the schools. For many of the students enrolled in the programs described in this study, home projects may not be feasible; however, school farms enabled students to pursue livestock SAEs. These findings support those of Warner and Washburn (2007) who found that on-campus facilities enabled students who lived in apartments or multi-family housing to be more involved in SAE programs. Similarly, Anyadoh and Barrick (1990) noted a positive relationship between the availability of on-campus facilities and successful SAE programs, which was later supported by Dyer and Osborne (1996).

Rubenstein and Thoron (2014) concluded outside support is necessary for SAEs to be successful. Notable divides between the haves and have-nots existed in the programs included in this study, which may create barriers to student participation in the popular livestock SAEs. In one

of the programs (San Gabriel) the innovation of the school district to provide project loans to students appeared to mitigate the efforts of financial struggles on student participation. Although this opportunity existed in only one of the three programs, the model implemented by the San Gabriel school district demonstrated the feasibility of other school districts creating similar programs to provide internal support for SAEs.

### FFA

FFA was the least emphasized component in the programs studied. The circumstances surrounding this finding supported and, yet, created questions regarding the feasibility of recommendations made in previous studies. LaVergne et al. (2011) and Martin and Kitchel (2014) noted the necessity for urban FFA chapters to engage stakeholders, including friends, family, and community to reach out to the student population. In one case, Calico Springs, no emphasis seemed to be placed on stakeholder support. Conversely, the other cases, San Gabriel and Northside, presented seemingly polar opposite situations. San Gabriel's long history beginning when the surrounding areas were rural and had a direct connection with agriculture seemed to be sustained through urbanization of the surrounding community. San Gabriel's ongoing stakeholder support and multiple generations of FFA members appeared to have a positive effect on the chapter's FFA success. Northside's situation was different; despite the large school population to draw from, Northside FFA did not have the recruiting success of the other programs. Northside FFA was established in 2012, which Kara noted to be a challenge. Given the unclear support of conclusions regarding stakeholder engagement (Martin & Kitchel, 2014; LaVergne et al., 2011), the issue of if or when to engage stakeholders requires more investigation. Additionally, there is reason to believe age of the FFA chapter may be related to the FFA chapter's ability to engage stakeholders.

## Discussion and Recommendations

Historically, agricultural education has been a homogeneous population of people and programs. Over time, some programs deviated from traditional programs by adopting unique aspects to meet the needs of their community. By adapting, some of these programs have been considered non-traditional. The students and schools described in this study may have differed from the common description of traditional programs—in terms of educational setting, enrollment, and student demographics—however, when considered holistically, the urban, large, and diverse programs were implementing each of the three aspects of the TPM. Each program was delivering instruction in a time-honored way and teaching production agriculture, including courses in animal science, horticulture, and agricultural mechanics. Urban students were actively engaged in production livestock SAEs (the strongest component of the programs we visited) and other SAEs more commonly found in rural programs (e.g., poultry production, agricultural mechanics, and turf-grass management). This shows that there is not as much difference between urban and rural programs as we once believed. Both programs offer students a chance to learn about production agriculture and learn practical skills.

As communities change and evolve, people in those communities become further removed from production agriculture. The programs we described used rigorous and relevant ways to teach students about agriculture in an environment that was not surrounded by production agriculture. According to teachers, agriculture was a novel and captivating topic for students. Students' lack of familiarity with production agriculture provided the perfect opportunity for students to experience something new. In this case, what was old had become new.

Further research may help to understand the similarities of programs and how they have evolved in changing communities. The focus on categorizing programs into traditional and non-

traditional or rural and urban may no longer be necessary. Urbanization has, and will likely continue, to distance the general public from production agriculture, resulting in a lack of knowledge necessary to meet the needs of a growing population. In the case of San Gabriel, the community was no longer the rural agriculture community of 30 years ago; neither was the school nor students. In many communities, students enrolled in agricultural education programs are different than the students of 30 years ago. Research is needed to understand the interaction between people and their environment: How can teachers engage students in all communities—urban, suburban, and rural—with agriculture? How do programs create more conducive learning environments for teaching production agriculture?

The emphasis on STEM integration must not overshadow the need to establish an educated public with fundamental understanding of food, fiber, and natural resources. Could the lack of familiarity with agriculture in all communities provide an opportunity for teachers to engage their students in traditional content, rather than changing curriculum? Is curriculum more engaging when students can touch the content? Resources, including livestock barns, greenhouses, and agricultural mechanics laboratories are essential to making traditional content more relevant. Space and funding are often barriers or gaps for schools obtaining these facilities, especially in underserved communities. The programs described in this study developed innovative ways to overcome barriers or bridge gaps, by focusing on solutions instead of problems, e.g., the SAE loan program at San Gabriel High School.

## Opportunities to Advance Agricultural Education Research

Social cognitive theory enabled us to gain a deeper conceptual understanding of the interaction between people, behaviors, and the environment within each component of the TPM. In the early stages of this study, we struggled to fit the programs to the models, and then we attempted to fit the models to the programs. It became a philosophical struggle between theoretical inquiry and practical application. Research relies on theoretical, operational, and conceptual guidance; many times the guidance is treated as rigid or concrete. It was not until we developed a more fluid relationship with the programs and models that we could understand the data. By allowing the components of TPM and SCT to be more fluid, we changed how we perceived the models and programs, not as rigid and structured, but able to change and adapt.

Many times the connections between personal, behavioral, and environmental determinants of social cognitive theory are approached as linear, reciprocal relationships. Similarly, connections in the three-circle model are approached as being true circles. In reality, both models are meant to convey a thought process—rather than divide components. The models and the interpretation should not be treated as a line in the dirt.

People, behaviors, and environments are dynamic. Teachers need models that go beyond theory and provide specific, operational guidance for implementation, assessment, and evaluation of success. Therefore, future research is critical to understanding the complexities of implementing a total program model in each agricultural education program.

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