

# Supervised Agricultural Experience Programs: An Examination of Committed Teachers and Student-Centered Programs

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## Abstract

*SAE programs were designed as an integral component in SBAE. However, participation has continued to decline. This qualitative study examined exemplary SAE programs in rural SBAE to discover factors that were working in SAE development and implementation. Through focus groups, individual and informal interviews, and observations, two themes that include 11 factors emerged from the data. This study found the agriculture teacher was the most important program partner in the development of an SAE program. Further, student learning must occur to ensure students continue to engage in an SAE program. The researchers recommended agriculture teachers utilize instructional time for the establishment, maintenance, and showcase of student SAE programs.*

Keywords: supervised agricultural experience; SAE development; agricultural education

The project method was developed as an integral component of agricultural education (Croom, 2008), presently called a Supervised Agricultural Experience (SAE) program. SAE programs remain an integral component of a total school-based agricultural education (SBAE) program (Phipps, Osborne, Dyer, & Ball, 2008). Within SBAE, learners have utilized SAE programs to promote contextual application of academic content and to develop career and life skills (Stimson, 1919; Talbert, Vaughn, Croom, & Lee, 2007). Barrick et al. (2011) purported that an SAE program was “a planned and supervised program of experience-based learning activities that extend school-based instruction and enhance their [student] knowledge, skills, and awareness of the agricultural industry” (p. 9). Newcomb, McCracken, Warmbord, and Whittington (2004) stated students engaged in an SAE program should produce educational goals, career goals, and yearly plans for enhancing their overall program and creation of career aspirations. Previous studies have reported students believe SAE programs enhance their career aspirations and strengthen their agriculture knowledge and skills (Dyer & Williams, 1997; Williams, 1979).

SAE programs provide students with the ability to apply academic concepts and develop career skills (Cheek, Arrington, Carter, & Randell, 1994). Stimson (1915) provided a clear description of the project method that was focused on the application of classroom principles in a real-world environment (typically the student’s home farm) that would increase in difficulty and scope. Agricultural educators have continued to believe SAE programs should increase in difficulty and scope, but allow more freedom in the development of a program that meets students’ interests and career aspirations across all facets of the agricultural industry (Barrick et al., 2011). By engaging in an SAE program, students have strengthened and developed workforce and societal

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skills necessary to be successful in their careers and life (Barrick et al., 1992). Roberts and Ball (2009) argued that industry-relevant skills and knowledge incorporated in SBAE curriculum, and SAE programs, provide students the opportunity to strengthen and enhance their industry skills. Finally, SBAE teachers and students must develop advisory relationships with industry partners to ensure students have the opportunity to learn necessary skills to be a productive member of the workforce (Phipps et al., 2008; Roberts & Ball, 2009).

However, the agricultural education literature has reported a decreasing number of students begin and complete SAE programs (Barrick, Hughes, & Baker, 1991; Dyer & Osborne, 1995; Leising & Zilbert, 1985; Retallick, 2010; Roberts & Harlin, 2007; Steele, 1997; Wilson & Moore, 2007). Studies reported the following as factors that limit student participation in SAE programs: teacher assistance to complete an established SAE, the lack of teacher encouragement to initiate an SAE, teacher perceived lack of time, facilities, resources, motivation, and communication between program partners (Dyer & Osborne, 1995; Foster, 1986; Lewis, Rayfield, & Moore, 2012). However, a majority of the literature only contains perceptions of students and fewer of teachers (Dyer & Osborne, 1995). Retallick (2010) reported five factors that influenced student participation in SAE: “(a) changing student demographics and societal attitudes, (b) mechanics and structure of schools, (c) resource availability, (d) image, and (e) agricultural education system” (p. 66). Further, Retallick has called for the expansion of SAE topics or foci based upon the consideration of demographics and resources available to students.

Many issues regarding the utilization of SAE have been discussed within the agricultural education literature. Teachers reported numerous concerns regarding their ability to develop and implement SAE programs (Barrick & Estep, 2011). Studies have recommended further examination of SAE program utilization in SBAE was needed (Dyer & Osborne, 1995; Retallick, 2010), and currently a paucity of research has been conducted examining teacher practice with respect to SAE (Dyer & Osborne, 1996). In the study conducted by Dyer and Osborne (1995) the teacher was considered to have the largest impact on student utilization of SAE programs. Phipps et al. (2008) stated SAE was one of the three major components of a total agricultural education program. Therefore, secondary agriculture teachers were expected to utilize SAE programs (Terry & Briers, 2010). However, Terry and Briers (2010) stated, on average, only three percent of an experienced teacher’s time was dedicated to SAE. Other findings concluded teachers discuss SAE in a conceptual and theoretical manner but fail to implement SAE as they conceptually and theoretically define (Retallick, 2010; Wilson & Moore, 2007).

Agriculture teachers consider SAE programs as a vital contextual learning opportunity for students (Phipps et al., 2008). In order for SAE to be reinvented or reinvigorated, SAE inquiry must evolve beyond perception-based research and identify successful teaching strategies for SAE instruction. The previously presented issues have caused the relevance and vitality of SAE programs to be questioned. This study investigated factors utilized during the development and implementation of SAE programs to provide insight on ways to increase usage of SAE in SBAE.

### **Purpose and Research Questions**

The purpose of this study was to identify factors present in the development and implementation of exemplary SAE programs in rural schools, substantiated by Priority Area Four of the National Research Agenda (Doerfert, 2011). The research questions that guided this study were as follows:

What [teacher; student; school; community; & family] factors were present in the development and implementation of exemplary SAE programs in rural schools?

### Conceptual Framework

Little work has been done to construct a model that guides the development and implementation of SAE programs. Figure 1 represents the researchers’ conceptual framework to guide this study. The framework explains the role of student, teacher, parent, community, and school factors on student intention, development, implementation, and continual use of SAE programs (Phipps et al., 2008). Further, Phipps et al. stated that students, parents, teachers, community members, and school administrators must agree upon the development and implementation of SAE programs. Bird, Martin, and Simonsen (2013) stated external and internal factors influence a student’s decision to participate in SAE. The goal of this study was to identify the student, teacher, parent, community, and school factors that influence the development and implementation of SAE programs.

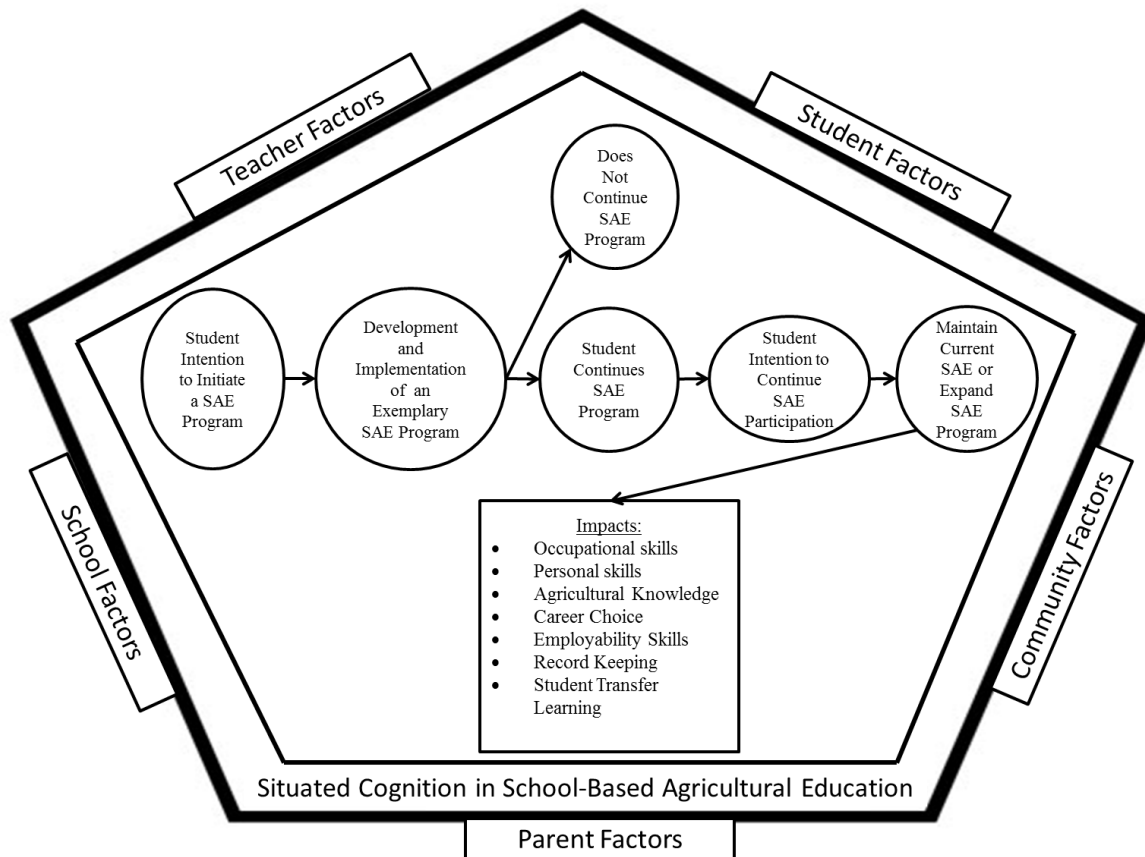


Figure 1. Conceptual model of SAE programs in SBAE.

### Theoretical Perspectives

Qualitative studies utilize ontological, epistemological, and theoretical perspectives to theoretically ground research (Crotty, 2010). In this study, the realism ontological perspective was utilized. Realism suggests individuals experiences the “real world” around them in their own way to construct their own meaning from their individualized interactions and perspectives (Maxwell, 2012). These interactions assist the learner in developing truths or knowledge that can be used to further develop knowledge through future experiences and interactions (Turner, 2008). The constructionist epistemological perspective and constructivism theoretical perspectives were

utilized to guide the study. Constructionists believe the reality a human embraces is different than the actual world (Guba & Lincoln, 1990). Therefore, humans must interact with the world around them to develop their own beliefs and knowledge (Crotty, 2010). Furthermore, the theoretical framework of constructivism refers to an individual's meaning making process. Constructivists postulate the meaning making process resembles the construction of knowledge where different experiences interact to develop meaning from various situations (Crotty, 2010). In this study, participants actively engaged in the development and implementation of individualized SAE programs. The experience of engaging in an SAE program strengthened participants' knowledge of the SAE development process.

### Methods

This study, which was part of a larger study, utilized a purposive method for participant selection (Koro-Ljungberg, Yendol-Hoppey, Smith, & Hayes, 2009). Two states were selected where the researchers had not previously worked and also had not partnered with anyone from the states on research activities to reduce threats to researcher bias. The researchers in this study were both former agricultural education teachers and believed SAE was a fundamental component of a total SAE program. Within the two states, the researchers contacted an agricultural education university faculty member and the state agricultural education supervisor to garner three to five rural agricultural education programs that met the *a priori* criteria of exemplary SAE programs. The criteria of exemplary SAE programs were as follows: (1) SBAE programs that conduct exemplary student SAEs have, at minimum, 75% of students enrolled in agricultural education courses who are engaged in SAE programs, where student SAEs consist of a multi-year program in which more than 100 hours have been recorded; (2) rural programs were SBAE programs where the town was less than 2,500 people (USDA, 2013). If the school was a county school system, than the SBAE program should be located in counties of less than 49,999 people (OMB, 2013).

The researchers gathered evidence through the United States Department of Education and the United States Department of Agriculture to determine if each school met criteria two. The researchers emailed and phoned each school to establish contact and request a phone interview to gather evidence of criteria once. After the phone interview, the researchers selected one school in each state to participate in the study. The agriculture teacher was notified of his or her selection for participation in the study, and on-site visits were established. The agriculture teacher was then asked to select six students who were establishing an SAE program for the first time and six students who had conducted an SAE for three years or more. A parent or guardian of each student was asked to participate in a focus group during the on-site visit.

Site visits were scheduled for a two-day observation and data collection period. During the site visit, a minimum of two student focus groups, two parent focus groups, one community member focus group, and teacher interviews were conducted. Each focus group contained between four and six participants (Morgan, 1988). Participants were given the opportunity to opt-out of the focus group or interview at any point during the data collection process. The focus groups and interviews were audio recorded and transcribed for data analysis. Observations and informal interviews were conducted with additional agriculture students who did not participate in the focus groups. This was done to establish consistency in the data between all students enrolled in the program and to achieve data saturation. The researcher noted data saturation during data analysis.

The data collection process spanned two on-site days. During day one, the agriculture teachers were asked to conduct a normal instructional lesson and the researcher observed the relationships between the agriculture teacher and students. These observations were conducted to understand the teacher-student dynamic and to assist in reducing the novelty effect. The researcher interviewed the agriculture teacher, one student, one parent focus group, and community members after school on day one. The second day consisted of observing students working on their SAE program, record system, and facilities utilized in their programs. During the observations the

researchers randomly identified students to participate in an informal interview. Following school on the second day, the remaining interviews and focus groups were conducted. Informal interviews consisted of a short 2-5 minute conversation with an individual student where their SAE program was described. Additional questions regarding the development of the program, students' interest in the program, and student learning were asked of participants during informal interviews. Interviews and focus groups were conducted utilizing a semi-structured interview guide. The individual interviews lasted between 50 and 90 minutes, while the focus groups lasted between 80 and 110 minutes. Pseudonyms were assigned to all participants during the transcription process to ensure data anonymity (Creswell, 1998; McMillian & Schumacher, 2010). Further, all identifiers were removed from the data to ensure participant anonymity was upheld. Focus group participants received an incentive for participating in the research study. An incentive was utilized as a stimulus to participate in the focus group. In this study, parents and community members were provided with \$25 for participation in the study (Krueger & Casey, 2000). Further, the agriculture teachers were provided \$75 for their participation and assistance with organizing focus group participants.

Lincoln and Guba (1985) construed a four-step constant comparative method that was utilized to compare across multiple cases without the development of relationships and a theory. This study was not conducted to develop theory; it was conducted to identify factors that should be utilized by SBAE teachers when developing and implementing SAE programs in rural secondary SBAE programs. The researchers utilized each of the proposed steps as follows:

1. Compare incidents applicable to each category – during this step the researcher established the creation of categories that described occurrences within the data. Categories were developed for each case and then compared between cases. The researcher defined properties or rules for the data that was incorporated in each category.
2. Integrate categories and their properties – during this step the researcher analyzed the categories that were established during the first step of the process. Some of the established categories were redefined, combined, or a subcategory was created.
3. Delimit the construction – during this step the researcher integrated categories as they become more defined during the analysis process. During this step fewer categories were created and more categories were combined to develop one category.
4. Write the construction – during this stage the researcher ensured that member checking of the data had been conducted and that the final written manuscript had been prepared.

To ensure the credibility of the research study, the researchers utilized: member checking, peer debriefing, persistent observations, referential adequacy materials, and triangulation (Dooley, 2007; Lincoln & Guba, 1985). Transferability was upheld through the use of thorough and thick descriptions of the context and data to ensure the results of the study can be applied and fully understood by the reader. To ensure dependability and trustworthiness were upheld, the researchers provided an audit trail with documentation on methodological decisions and reflection on the influence that the methodological decision had on the outcome (Dooley, 2007). Further the researchers in this study were a PhD Candidate and Assistant Professor with formal training in SAE program development. Both researchers believed SAE was an integral component of a SBAE program.

## Findings

Based upon the criteria established for this study, each program was conducting exemplary SAE programs and in a rural setting. School A (located in Minnesota) had one agriculture teacher with over 150 students and a community agricultural focus on seed corn production. School B (located in Georgia) had two teachers and over 225 students where a variety of agricultural industries were present in the community.

The agriculture teachers in both programs had completed or were in the process of completing a Master of Science degree specializing in Agricultural Education. Two of the three agriculture teacher participants were male. The agriculture teachers had between five and seven years of teaching experience. As a high school student, each teacher was enrolled in a SBAE program, conducted an SAE, and was a member of FFA. It was observed in both schools that the agriculture teachers had a positive relationship with the students enrolled in the SBAE program. The student participants were enrolled in an agriculture class and were conducting an SAE with varying experience of years in the program, FFA and SAE. Students at both data collection sites had a range of SAE types. The parents and community members who participated in this study were all actively engaged in working with a student conducting an SAE program. All community members (also all employed in the agriculture industry) and over half of the parents (1/4 employed in the agriculture industry) had worked with previous students. As this was part of a larger study, two of the five themes that developed from the data were presented.

### Committed Teachers

The first theme established from the data committed teachers. The committed teachers theme incorporated a variety of specific factors that were primarily implemented by the agriculture teacher. The identified factors included: involved teachers, concrete examples, early introduction of SAE, required SAE programs, team approach to development, and SAE grade.

**Involved teachers.** The student and parent participants noted the agriculture teacher was involved in the development and implementation of SAE programs by constantly working with students. The agriculture teacher worked to ensure students enrolled in their classes had an SAE program. Parent-6 said, "I would say that the biggest person that probably influenced what the kids were going to do was the instructor. I think there's a lot of expectations on the kids to participate; not only to participate but to do well at whatever they're doing." Beyond simply helping students establish an SAE program, the agriculture teachers were involved in assisting students with continually improving their SAE. Student-5, who conducted an agricultural mechanics entrepreneurship SAE, stated, "[My teacher] helped me in my ag mechanics class and also outside of school giving me tips on how to do certain things to build my chairs more effectively." Student-5's mother (Parent-10) responded, "It really has been a lot of involvement with the teachers and advisors that my son has an SAE program."

Participants stated the agriculture teachers provided support to the students in acquiring resources to conduct their SAE program. Some of the students in the participating schools lacked resources to conduct an SAE program. Therefore, the agriculture teachers spent time assisting students in finding adequate resources in order to conduct the students' desired SAE program. Parent-2 responded, "when he [student] first brought the idea up that he wanted to raise cows, [teacher] gave him input on what to do, where to go if he needed help." The participants noted the agriculture teacher encouraged students to participate in SAE. The agriculture students noted that without the agriculture teacher's encouragement to participate, they would have not conducted an SAE program. Student-11 stated the agriculture teacher "knew I liked plants and it really opened my eyes to see what I could do, because I would've never done it without [my teacher] telling me that I was capable of doing that."

**Concrete examples.** When instructing students in class about SAE programs, the agriculture teachers who participated in this study, stated they constantly utilized concrete examples of current or previous SAE programs within their program. School B required students to complete a student showcase of their SAE programs in class. The student showcase included a description of their SAE program, program goals, program achievements, and photos. Teacher-2 stated, “in conjunction with their proficiency application or report that they complete, we have them complete a tri-board display...each class is assigned a presentation day, and they will present about their project.” When initially discussing SAE, the teachers stated they work with students to determine if the students were engaged in an activity that could become their SAE program. Teacher-3 stated they ask students, “am I already working in my parents yard? Am I already doing some heavy equipment operation or repairs or something like that? If I am, then maybe I already got something. We do that on the very first day actually.”

Students described the examples provided in class assisted them in developing their SAE programs. During an informal interview, one student stated, “if [my teacher] had not spent time providing me examples, I am not sure if I would have ever figured out an SAE for this class.” The students recognized being presented different example SAE’s demonstrated that an SAE could be interesting and engaging. Student-6 stated, “Just going around and looking at everyone’s pictures, you would think this could be a lot of fun.”

**Early introduction of SAE.** The agriculture teachers were adamant that students began their SAE instructional unit within the first two to three weeks of school. During this instructional unit, the agriculture teacher conducted various activities to assist students in identifying an SAE program that met their interests, abilities, and resources. Teacher-1 described the teacher’s role in SAE development and implementation “I think that as the teacher you have to guide students in a direction. Students have a hard time determining what they want their project to be or may have a hard time seeing what it could become.” Teachers in both SBAE programs required students to complete a teacher approval form for their SAE programs. Teacher-2 explained the teacher approval process, “they’ll come up with three options, and they’ll list those options first, second, and third. Then, we will sit down and we’ll try to figure out exactly which one fits the best.”

Student participants stated they were intimidated by the SAE concept and skeptical of their ability at the beginning of instruction. Some of the students stated the handouts worried them about the complexity of an SAE. Student-8 responded that the introduction of an SAE program was “very scary. [My teacher] stands up and [my teacher] has this stack of papers in their hand and [my teacher] goes, buckle your seatbelt, because you’re going to be dedicated to this class until the end of the semester.” However, other students were immediately interested in the concept of SAE because of the concrete examples provided by the agriculture teacher. Student-1 stated, “I remember [my teacher] giving all kinds of examples ... [my teacher] makes it seem really fun and that you can really get engaged and that you can really do something with it.”

**Required SAE programs.** Teachers, students, and parents agreed one major reason students participated in SAE was due to the course requirement. The requirement to participate ensured every student would initially start an SAE program and continually be engaged in the program throughout the course. While teachers reported difficulty engaging some students, the agriculture teachers believed it was essential to engage all students in an SAE. Teacher-1 stated, “we go ahead and tell them [students] before they even enroll in the class, there is a project that goes with this and this requires a lot of time and it requires some work outside of the classroom.” Teacher-1 further commented, “I feel like they learn a lot more from the SAE’s and that’s just because to me [there] is so much real life application there.” Teacher-3 agreed that SAE programs were vital to the success of SBAE, “If I didn’t have SAE, my classes wouldn’t be as strong as they are and my students wouldn’t be as successful as they are.”

The student participants agreed that they were required to conduct an SAE program, initially because it was required to be in an agricultural education course and to be a member of the FFA chapter. Student-17 stated “without having the requirement of an SAE to be in FFA, and

compete on different teams and stuff I probably wouldn't care as much ... but if I didn't have to do one, I guess I probably wouldn't have." The requirement of conducting an SAE program was recognized by the parent participants as well. Parent-16 responded, "I think once she took the agriculture class it was basically maybe a requirement to do it."

**Team approach to development.** When developing an SAE program, teachers and community members believed a team approach should be utilized. Both participant groups did not believe the same individuals (teacher, parent, or community member) were necessary in the development of every SAE program. Teacher-2 believed that "SAE is a total involvement between the parent and the student and the teacher." While, teacher-1 contested "maybe not the more people but that the quality of people that you have involved with an SAE can have a big influence on its success." Community member-3 admitted, "I think a big driver needs to be the advisor because I think if the advisor isn't then kids will have a hard time. Parents can do it but that's not every parent."

**SAE grade.** Beyond simply requiring every student to conduct an SAE program, the teachers stated they also assigned every student a grade for involvement in SAE. The teachers believed students were responsible for being actively involved in their program and to keep an accurate record book documenting involvement. Teacher-2 commented, "it's the teacher's job to evaluate the student." Teacher-1 added, "our students know that if they don't do an SAE project and they don't turn in the assignments that go with it that they do not have an opportunity to pass." When grading a student's SAE, the teachers discussed their grading procedures. Each of the teachers described a subjective grading system that examined if evidence of student learning was present and if students had achieved their established goals for their SAE program. Teacher-3 stated, "all that I use is my own quality of evaluation, so I don't have a set rubric. Mostly because every one of them is going to be on a different level."

### Student-Centered SAE Program

Throughout the informal interviews, formal interviews, focus groups, and observations it was noted that student SAE programs were primarily determined based upon their particular interests. From the data, the researchers established six subthemes: career/student interest focus, school resources, specialized program for each student, student learning, and FFA influence.

**Career/student interest focus.** A student's personal and career interests were a focus of the development process by teachers, students, parents, and community members. The participants noted students' interests drove them to succeed and persevere. Teacher-1 stated, "a student whose doing an SAE that they're not interested in, they're not going to carry it out." The participants described SAE programs as a possible way for students to explore different careers before attending college. Teacher-2 stated, "if I see them a year or two down the road and they're actually pursuing a career or something that I taught them, it's very rewarding."

Many of the students who participated in the focus groups expressed a sincere and developed interest in their SAE topic area. Student-1 stated, "I've always worked with horses and around horses my whole life but I wanted an opportunity to further my equine training and be able to eventually train horses on my own which I'm starting right now." During the focus group discussion, student-5 discussed his/her father's occupation as the influencer for the SAE topic. "He works in construction, he always has and now he owns his own home remodeling business. I've always been around woodworking and working with tools and everything." The parents agreed that their children chose their SAE programs because of their personal or family interests in their SAE topic areas. Parent-1 stated, "I am guessing that the program was fully developed per their interests ... he chose what he knows and now it's been kind of fun."

**School resources.** Once SAE programs were developed, the agriculture teachers, students, and parents discussed that in some cases school resources were necessary for students to adequately conduct their SAE programs. Teacher-2 denoted that "if they need to come in and work on



something in one of the ag shops, they can do that ... If they need to use the greenhouse, they have access to all school facilities.” When the agriculture teachers discussed this concept, they were rather distraught and their voices began to become soft. The agriculture teachers’ physical body language became rather reserved, demonstrating that they were upset and wanted to do more to help students engage in SAE.

Students who utilized school resources were thankful for the opportunity to participate in an SAE program. Student-11 noted the agriculture teacher “knew that I had an interest in plants and asked me if I’d like to work with in the greenhouse and take care of it.” Parents also recognized the need for student use of school resources. Parent-12 explained, “we had an advisor here that was working this summer on getting their classroom ready and that kind of thing and [Student-5] was able to come up here and use the ag mech lab.”

**Specialized program for each student.** Within the educational system, teachers and school districts recognize every student has individual needs in order to facilitate learning. Those individual needs were not exempt from conducting an SAE program. The teachers in this study indicated ensuring every student has an SAE program that meets personal needs was one of the most difficult parts of developing and implementing SAE and of the total implementation of an agricultural education program. Teacher-3 denoted that the students who had very limited resources were the hardest to assist in the development process, “those ones that just literally don’t have anything that are the biggest struggle. Those are the ones that are time consuming ones.” Teacher-3 further discussed possible SAE programs for students with limited resources, “sometimes we end up with a research paper, and unfortunately that just happens, but 99% of the time, we end up with some kind of a project where they can go home and at least say, ‘I’m learning something.’” Financial resources to purchase items or animals for their SAE programs limited some students. In some cases, community members and community organizations provided physical and financial resources to students who were conducting an SAE. Teacher-2 explained, “Our local Kiwanis club actually awards animals to kids, they can apply and receive it and we’ve had students do that.” Further, student-17 explicated “with my SAE I got \$500 from our Alumni to help. Starting my SAE would’ve been a lot harder without that money.”

**Student learning.** Throughout the informal interviews, formal interviews, focus groups, and observations, it was evident student learning was at the forefront of the purpose for utilizing SAE in the SBAE classroom. The agriculture teachers who participated in this study explained student learning, career knowledge/skill development, and personal life skill development were the primary reasons for utilizing SAE programs in SBAE. Teacher-2 insisted, “the skills and responsibility and things that he learns in landscaping can be directly tied to whether he’s working in a small business or whether he’s working in the healthcare industry or anything else.” Teacher-3 further explained, “I wish every kid could make a ton of money, but it’s not dollars that allow students to achieve some goals. I have kids who failed miserably, but the things that they’ve learned by failing miserably will help them.” Many of the students developed SAE programs that influenced their career choices. While not all students believed they will begin a career within their SAE topic area, they did note their experience assisted them in identifying careers they were interested in as well as those they have little to no interest specializing in. Student-12 expressed learning through their plant science research SAE program was “interesting for me and that’s what makes me want to keep doing plant research, so I don’t know how motivating it is but it’s something I would like to do when I’m older as well.” The parents believed student learning assisted in motivating students to continue their participation in SAE. Parent-2 stated “[Student-15] likes to be well-rounded and knowledgeable; he likes to know about everything.” Further, parents and community members reported SAE programs assisted their students in identifying future careers. Community member-2 expressed that a student was presented with a multitude of opportunities because “he’s motivated to learn how to weld many different things. He just doesn’t want to strip or arch weld, or wire feed weld. His ultimate goal now is to be a underwater pipe welder.”

**FFA influence.** When describing their interest in participating in an SAE program, students' involvement in the FFA chapter was a motivating factor for them to engage in an SAE noted it. However, the teachers indicated they spent little time discussing the FFA award and degree structure during their instruction of SAE and their requirements would not allow students to earn a state FFA degree. This was to ensure students would first become interested in their SAE and then the teacher could discuss the possibility of earning a FFA degree or award. Teacher-2 described recognition through FFA as, "it's good for the kid to win the proficiency application. But for the kid to have learned a skill, responsibility, something that they'll remember and use in their development later on in life, to me that's the success."

The student participants stated the ability to earn their State FFA Degree was a motivating factor for them to go above and beyond the course requirements for their SAE programs. Student-7 stated FFA was "one of the reasons I actually chose my SAE, because to get your State FFA Degree you have to have 300 hours and I thought that I would enjoy spending time in an agricultural education SAE." While parents recognized their student was involved in FFA, it was noted some parents believed SAE was a component of FFA. Parent-16 stated, "her SAE project I think that's what she is wanting to go towards, a competition type thing through FFA." Meanwhile, community member-3 suggested FFA was a student motivator "for lots of different reasons whether it's awards or money or wanting to be on stage."

### **Conclusion, Implications, and Recommendations**

The agriculture teacher was the most important influencer in engaging the included students in their SAE program. This supports the work of Osborne (1988) and Swortzel (1996) who reported similar findings that the agriculture teacher has the most influence over the utilization of SAE programs within SBAE. Therefore, teacher preparation programs must continue to prepare preservice teachers to develop, implement, and supervise SAE programs. Preservice teaching programs must continue to instruct students in the why, what, and how of creating exemplary SAE programs. Furthermore, teacher educators should provide inservice teachers with professional development regarding SAE program development, implementation, and supervision.

In SBAE programs where exemplary SAE programs exist, every agriculture student was required to conduct an SAE program. This conclusion was supported by the work of Roberts and Dyer (2004) and Terry and Briers (2010) who postulated teachers were expected to utilize SAE and to encourage students to participate in an SAE program. However, this study found SAE was one of the most difficult components of agricultural education to teach and implement with students, supporting Robinson and Haynes (2011).

Similar to the work of Leising and Zilbert (1985), this study found during the development process of a student SAE program, the agriculture teacher should provide clear engagement expectations for the student. By providing clear expectations, agriculture students were more prepared for conducting an SAE program. The researchers also concluded that all students were evaluated during their SAE program. Beyond evaluation, teachers should utilize program partners in the SAE development and implementation processes, when necessary. The agriculture teacher should identify the most appropriate program partner and begin to foster a positive relationship between the two parties, therefore promoting student engagement in their SAE program.

Student interest drives the SAE development and implementation processes. This finding supported Phipps et al. (2008) who described student SAE programs could be developed based on student interest. The agriculture teachers found during the first year of agricultural education some agriculture student's SAE programs were developed based upon resources. However, the agriculture teacher and student participants noted an SAE program should be developed based upon student interests instead of resources. This finding was supported by Bird et al. (2013) who reported students who complete more than one year of an SAE were motivated by internal motivators, such as interest in their SAE program topic. By providing school resources to agriculture students,

agriculture teachers can garner parental and community support for the agricultural education program. Therefore, if agriculture teachers assist students in securing the necessary resources to carry out an SAE program, student participation in SAE may increase. Supporting the recommendation of Lewis et al. (2012), the agriculture teachers described that school resources were often utilized to ensure all students conducted an SAE.

All participants believed involvement in an SAE program influences an agriculture student's career decisions. This finding supported Rubenstein and Thoron (2014) who found American FFA Degree Star Finalists believed involvement in a successful SAE program influenced their career decisions. Supporting the work of Roberts and Harlin (2007), the agriculture teachers in this study believed SAE programs should be utilized to assist student in exploring potential careers within the agriculture industry. Conversely to the findings of Pals (1988), the parents in this study believed agriculture student involvement in an SAE program did influence a student's career choice. Beyond simply impacting a student's career choice, participants believed SAE programs should be developed to further support and promote student learning. The work of Barrick et al. (2011) supported the finding that student learning and development should be an essential component of an SAE program. Further, Rubenstein and Thoron (2014) found a benefit of engagement in a successful SAE was knowledge gain about a specific skill and the agriculture industry. Therefore, it was concluded that student development and growth was an essential component in an exemplary SAE.

FFA awards and degrees were an extrinsic motivator for student participation in SAE. This finding supported Bird et al. (2013) that found the extrinsic motivator of the FFA award and degree system initially motivated agriculture students to engage in an SAE program. Bird et al. further stated after the first year intrinsic motivators had a larger influence on student participation than extrinsic motivators, such as the National FFA Organization. In this study, many of the student participants saw FFA as a supporter of their SAE, not as a purpose for their SAE. This finding differed from Leising and Zilbert (1985) and Williams (1979), who found that student participation was due to the influence of the FFA award and degree structure.

While parents were extremely supportive of student participation in SAE, it was found that parents lack general knowledge of SAE concepts. Phipps et al. (2008) supported this finding and further stated that agriculture teachers should provide parents with information regarding the purpose and benefit of student engagement in an SAE program. However, in this study it was found that even with a lack of parental knowledge of SAE that parents were still supportive of student participation. Therefore, it was concluded that parents needed limited information regarding SAE to be supportive and encourage student participation in their SAE program. It was important for agriculture teachers to purposefully select the information that they share with parents during the development and implementation process. This information should include teacher expectations for student SAE programs and parent involvement in SAE.

Students utilized SAE program goals instead of a 4-year plan. In this study, agriculture teachers believed that it was more beneficial for the agriculture students to develop reasonable and attainable goals for their SAEs. Further, it was found that student SAE goals included both skill/career-based and personal development goals. The students suggested that their agriculture teacher provided support in the development of their SAE goals, supporting Williams (1980).

Based upon the findings of this study, the following recommendations for practice have been drawn: (1) the agriculture teacher should support and encourage student participation in SAE; (2) when instructing students about SAE, the agriculture teacher should utilize concrete examples of student SAE programs; (3) instruction in SAE and SAE record keeping should occur in the first month of classroom instruction; (4) the agriculture teacher should evaluate the SAE based upon the students' development during their engagement in their SAE; (5) agriculture teachers should continue to utilize SAE in a total SBAE program; (6) agriculture teachers should integrate student SAE programs into classroom instruction; (7) agriculture teachers should conduct an SAE showcase at the end of a semester for students to showcase their work; (8) students should receive

a grade for their SAE programs; (9) SAE participation should be required of all students; (10) agriculture teachers should assist students in the development of SAE programs that incorporate the student's interests (11) agriculture teachers should assist students in ensuring learning is present in an SAE; (12) agriculture teachers should identify school resources that can be utilized by students when conducting an SAE. Based upon the findings of this study, the following recommendations for teacher preparation programs have been drawn: (1) teacher educators should engage preservice teachers in SAE programs to ensure all agriculture teachers have personal experience with SAE; (2) teacher educators should continue to include SAE instruction in a teacher preparation program. Based upon the findings of this study, the following recommendations for future research have been drawn: (1) examination of the factors utilized during the development and implementation process through experimental studies; (2) a quasi-experimental study should investigate the utilization of student goals versus four-year plan.

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