

# An Assessment of Students' Perceptions Toward Factors Influencing Supervised Agricultural Experience Participation

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*The purpose of this study was to investigate student perceptions toward factors influencing Supervised Agricultural Experience (SAE) participation. This descriptive study was conducted in 120 randomly selected agricultural education programs throughout four purposively selected states representative of the National FFA regions. Within each state the programs randomly selected to participate were from FFA divisions characterized as having urban city-centers with outlying rural/suburban areas. Students in the programs completed a questionnaire assessing perceptions toward factors influencing SAE participation. According to findings of this study, each state had three prominent types of school SAE resources perceived available for student use. Almost all students with a SAE project believed their teacher encouraged every student to have a SAE, and most received SAE help from a teacher monthly. Factors such as agricultural education courses, parental and teacher support and encouragement, resources (money and facilities), and opportunities for awards and recognition did not seem to influence student SAE participation. Students did believe skill development from SAE participation would be beneficial to their future. Contrary to previous research, involvement in community and school activities did not seem to decrease student SAE participation.*

Keywords: Supervised agricultural experience (SAE); student perceptions of SAE; factors influencing SAE participation

## Introduction—Theoretical Framework

Across the profession, agricultural educators agree Supervised Agricultural Experience (SAE) programs are an integral component of the agricultural education model (Croom, 2008). However, a growing concern over the lack of student participation in SAE has developed among members of the profession. Although new approaches to SAE have been conceived to target the audience of non-traditional agricultural students, a decline in SAE participation seems to be occurring (Croom, 2008). Much research has been conducted to address the theoretical value and perceptions of SAE (Barrick, 1991; Boone, Doerfert, & Elliot, 1987; Camp, Clark, & Fallon, 2000; Case, 1983;

Cheek, Arrington, Carter, & Randell, 1994; Dyer & Osborne, 1995, 1996; Dyer & Williams, 1997; Foster, 1986; Moore, 1987; Rayfield & Wilson, 2009; Roberts, 2006; Steele, 1997; Stewart & Birkenholz, 1991; Swortzel, 1996; Whaley & Lucero, 1993; White & Pals, 2004; Wilson & Moore, 2007), but very little data could be found on increasing their implementation. This study sought to assess student perceptions toward factors influencing SAE participation, in order that methods may be cultivated to diminish the decline. According to the American Association for Agricultural Education's National Research Agenda (Doerfert, 2011), this study aligns with priority area four by examining the role of motivation, self-regulation, metacognition, and reflection in

developing meaningful, engaged learning experiences in agricultural education contexts. By understanding student perceptions related to SAE participation, the agricultural education community may be able to improve quality experiential learning opportunities.

Known as the father of agricultural education, Rufus W. Stimson is credited with developing the *project method* of teaching, establishing the foundational framework for SAE in agricultural education. SAEs have developed since Stimson's home project method to include present day agribusiness endeavors, agriscience research, agricultural service-learning opportunities, and agricultural placement programs, as well traditional production agriculture (NAAE, 2012). The National FFA Organization (2012) lists the following categories of SAEs: exploratory, experimentation and research, entrepreneurship and ownership, placement, and improvement. A SAE is "a practical application of classroom concepts designed to provide 'real world' experiences and develop skills in agriculturally related career areas" (National FFA Organization, 2012, p.3). Since the organization of agricultural clubs and the implementation of the SAE predecessor, Stimson's *home projects*, agricultural students have been fulfilling the FFA motto by *learning to do* through SAE programs.

Most agricultural educators agree that SAE projects should be required of all agricultural students (Croom, 2008). However, many educators differ on the meaning of the word *agricultural* in SAE. Some educators believe agricultural to only be defined as farming, while others define agricultural as any career connected to food and natural resources. The differing philosophies result in educators considering the qualifications of SAE implementation diversely. It is believed by some that SAE projects may only be conducted outside instructional hours and school grounds. However, Beeman (1967) stated that agricultural education teachers and administrators agree schools should provide resources for use with instruction and SAEs, as school facilities are potentially viable sources of SAE programs (Berkey & Sutphin, 1984). There does not seem to be a definitive definition for SAE (Dyer &

Osborne, 1996). Many states, FFA associations, university agricultural education programs, and agricultural educators define SAE differently. Nevertheless, even with these differing delineations, the agricultural education profession agrees that SAE programs are beneficial for students to engage in. In his address to the Harvard Teachers' Association, Stimson (1915) stated, "we ought to have a different type of education of secondary grade for those who desired direct preparation for life" (p. 474). SAE is this type of education for agricultural students. Knobloch (1999) summarized the benefits of SAEs well in his article for *The Agricultural Education Magazine*:

Supervised agricultural experiences implemented in agricultural education programs by its true definition of students experiencing agriculture with adult supervision have proven to help students apply knowledge, clarify career choices, solve problems through decision making, develop responsibility, and learn agricultural skills through practical experiences. (p. 16)

Furthermore, student benefits resulting from SAE programs include personal finance, maturation, development of employment skills, and recognition for achievements (Stewart & Birkenholz, 1991).

To help agricultural educators evaluate the success of their program, National Quality Program Standards for Secondary (Grades 9–12) Agricultural Education were established in 2009 through a project funded by The National Council for Agricultural Education. According to the standards identified in the project, agricultural programs are evaluated using ranking scores for a series of quality indicators for each standard. Several standards in the project address the requirement of all students to have a quality SAE program (The National Council for Agricultural Education, 2009). Standard 2: Experiential Learning of the National Quality Program Standards (The National Council for Agricultural Education, 2009) states that "education is enhanced through active participation by all students in a year-round experiential learning program" (p. 25). In

order to meet the criteria for Standard 2, seven quality indicators for SAE participation, recordkeeping, and supervision must receive an exemplary indicator score by an agricultural program. Standard 1: Program Design and Instruction contains the quality indicator that “experiential learning (SAE) and leadership and personal development (FFA) are integrated throughout the instructional program” (p. 6).

Although the value of SAE programs is evident (Croom, 2008) a synthesis of research conducted by Dyer and Williams (1997) on SAE participation reported the following statistics: only 69.2% of students in Louisiana had SAE programs; 43.0% of students in California had no SAE program; less than half the students in Florida agricultural classes had been involved in SAE programs for all four years of high school; and only 58.0% of students were estimated to have SAE programs in North Carolina. Little research can be found to identify the level of SAE participation by students in Indiana, Missouri, and Utah.

While the integrated three-component model of agricultural education (Phipps & Osborne, 1988) depicts equal emphasis on each part, SAE programs appear to be the weakest (Croom, 2008). Less than one-third of agricultural educators in the nation reported 75.0% or higher participation rate in SAE (Wilson & Moore, 2007). Based on this statistic, teachers need help in improving the quality of the SAE component in their program, but this cannot be accomplished if barriers to participation are not identifiable. Many perceptions exist as to why participation has decreased by students enrolled in agricultural education courses. A few of these factors, identified by agricultural educators, include: lack of time, increased number of students in the classroom, complicated record-keeping, limited school and community opportunities, lack of facilities, low student desire, lack of agricultural background, and a lack of knowledge of the newer categories of SAE (Steele, 1997; Wilson & Moore, 2007). In rural schools, Whaley and Lucero (1993) identified the image of production agriculture, transportation, a lack of appropriate facilities and equipment as perceived barriers. These barriers were agreed on by focus group interviews conducted by Retallick (2010)

and reported in five categories: “changing demographics and societal attitudes, mechanics and structure of schools, resource availability, the agricultural education system, and image” (p. 64). Unfortunately, none of these perceived factors have data to validate their causation in the growing decline of participation by agricultural students in SAE programs. In addition, no data can be found to determine the barriers to SAE participation from the agricultural students’ perspective.

The theoretical framework for this study is rooted in Ajzen and Madden’s (1986) Theory of Planned Behavior (TPB). According to TPB, a person’s intentions and behaviors are influenced by three determinants: attitude toward the behavior, the subjective norm, and the perceived behavioral control. The attitude a person has toward the behavior is determined by the perception of how favorable or unfavorable the behavior is. Social pressures to perform or not to perform the behavior are taken into consideration by the person, which determines the subjective norm (Ajzen, 1991). Perceived behavioral control is described by Ajzen (1991) as the “sense of self-efficacy or ability to perform the behavior or interest” (p. 118). Ajzen concluded that people will attempt a behavior when they believe they have the ability, means, and opportunities to perform the behavior.

For purposes of this study, researchers operationalized attitudes as student perceptions toward factors influencing SAE participation. Student responses to the influence of a factor on their participation indicated whether they believed the behavior (SAE participation) was considered favorable or unfavorable. A subjective norm was indicated based on literature, as SAE participation is promoted by educators and stakeholders on the state and national levels (Wilson & Moore, 2007). The students’ perceived behavioral control was operationalized by the degree factors influenced SAE participation. This study only sought to identify the students’ attitude (perceptions) toward factors influencing the behavior (SAE participation).

### Purpose and Objectives

The purpose of this study was to assess student perceptions toward factors influencing SAE participation. The research objectives of this study were to:

1. Identify the number of student SAE participants.
2. Examine the availability of school resources for student SAE programs.
3. Describe student perceptions on teacher SAE encouragement.
4. Examine the frequency of SAE help from teacher received by students.
5. Describe student level of agreement with factors influencing SAE participation.

### Methods and Procedures

To determine the factors students perceived as influential to their participation in SAEs, a study of enrolled agricultural students in 120 secondary agricultural education programs, 30 per state, one state per National FFA region, was conducted. This study was descriptive in nature, in that it attempted “to describe a given state of affairs as fully and carefully as possible” (Frankel & Wallen, 2009, p. 390) and utilized a questionnaire as the method of data collection. One state per National FFA region was purposively chosen based on similar size and structure within the state FFA divisions (districts/areas/regions), for a total of four states. Frankel and Wallen (2009) stated that investigators can use personal judgment to select a sample based on previous knowledge of a population and the specific purpose of the research. Each division per state chosen included an urban city center with agricultural education programs and outlying rural/suburban agricultural education programs based on the U.S. Census. Thirty programs were randomly selected from each state’s purposively chosen division for participation in the study, with a total of 120 agricultural programs contacted. Teachers were asked to administer the questionnaire to students who had completed at least one year of agricultural education instruction registered in their class with the largest enrollment. It is noted that a limitation

of this study exists due to the nature of teacher-administered questionnaires. It was assumed that teachers followed the administration instructions provided as outlined to maintain consistency and did not influence student response to create bias.

A researcher-designed instrument was used in this study to assess students’ perceptions toward factors influencing SAE participation. Content and face validity of the instrument were determined by an established panel of ten experts prior to a pilot study. Reliability was determined for each of the instrument constructs from data collected by a pilot study using Cronbach’s Alpha. This coefficient is a general form of the Kuder–Richardson KR20 formula to be used in calculating the reliability of items (Fraenkel & Wallen, 2009) and is the average of the correlation coefficient for each split determined from the split-half reliability method (Field, 2009). Construct one ( $\alpha = 0.75$ ) of the instrument asked students to identify if they participated in SAE programs by responding *yes* or *no*. Construct two ( $\alpha = 0.85$ ) of the instrument asked questions specifically related to student perceptions of school SAE resource availability, teacher SAE encouragement, and teacher SAE help. Construct three ( $\alpha = 0.97$ ) of the instrument assessed student level of agreement with several factors influencing SAE participation on a Likert-type scale. Basic demographic information was gathered by the fourth construct ( $\alpha = 0.71$ ).

For data collection, Dillman, Smyth, and Christian’s (2009) Tailored Design Method was followed. Five points of contact with participants were made and were considered desirable according to the Tailored Design Method: a brief pre-notice letter or e-mail, a questionnaire mailing with a cover letter via paper mail or e-mail delivery, a thank you or reminder letter via paper mail or e-mail delivery, a replacement questionnaire via paper mail, and a final contact via paper mail or e-mail. Teachers were asked to have the students in their largest class who had completed at least one year of agricultural education instruction complete the study questionnaire. A pre-notice was sent through e-mail to the lead teacher or agricultural department head of the 120 randomly selected agricultural education

programs seeking participation. Teachers were asked to respond to the pre-notice e-mail indicating their preferred method of questionnaire delivery via paper or through Qualtrics™, a survey hosting website, and the number of students enrolled in their largest agricultural education course. Only one teacher preferred to administer the questionnaire online to students. The remaining teachers received paper questionnaires in the first packet mailed. If teachers did not indicate the number of students enrolled in their largest class, 25 questionnaires were sent in all packets. The questionnaires were distributed initially four days following the pre-notice email. Ten days later, the first reminder was sent to non-respondents. The programs yet to return completed questionnaires were randomly selected for the following two reminder delivery method groups: e-mail or paper. The first reminder was sent to the non-respondent programs via the delivery method of the group they were selected in. Seven days after the first reminder was sent, a second paper questionnaire packet was sent to the programs that had still not completed the questionnaires. After 10 days, a second reminder was sent to the non-respondent programs using the opposite delivery method from the first reminder. Initial data collection was completed one week from when the second reminder was sent.

Ten days after the initial data collection was completed, non-respondents were contacted through a telephone call to solicit participation in the study. The non-respondents willing to

participate in the study received a third packet of questionnaires by mail. Five days after the third questionnaire packet was distributed, a reminder was sent to the non-respondents of the non-respondent group using the opposite reminder delivery method previously for the second reminder. Data collection was completed seven days after the reminder to the non-respondents of the non-respondent group was sent. Only one packet of completed student questionnaires was returned by the non-respondent group.

To address non-response error, it was attempted to compare respondents to non-respondents; however, because less than 20 non-respondent responses were received the statistical power was too low to detect differences between respondents and non-respondents (Lindner, Murphy, & Briers, 2001). Instead, using Method 1 (Lindner, Murphy, & Briers, 2001) to address non-response error, researchers combined all responses and compared early to late respondents. There were no statistically significant differences between the early and late respondents.

At the conclusion of the study, 52 of the 120 randomly selected programs returned questionnaires for a total response rate of 43.3% ( $N = 120, n = 52$ ). As a result 1,038 questionnaires were completed by students in the randomly selected programs of the purposively chosen divisions of the four states selected for this study. Table 1 illustrates the program response rate and number of students who completed the questionnaire per state.

Table 1  
*Program Response and Number of Completed Surveys*

	Programs Contacted	Programs Responded	Students
	<i>f</i>	<i>f</i>	<i>f</i>
Florida	30	19	432
Indiana	30	9	162
Missouri	30	15	253
Utah	30	9	191
TOTAL	120	52	1,038

*Note.* Eight programs elected not to participate in the study and were not included in the number of programs responded for each state.

Data analysis was conducted using the Statistical Package for Social Sciences for Windows version 17.0. Descriptive statistics

were generated for student SAE participation, school resources perceived available for student SAE program use, and SAE help from teachers

received by students. Means and standard deviations were calculated for level of agreement by students with factors influencing SAE participation.

### Findings

At the conclusion of data collection, this study was able to meet the first objective goal by

identifying the number of student SAE participants from the programs surveyed in Florida, Indiana, Missouri, and Utah. Based on the total responses from the four states ( $N = 1,027$ ), 46.1% ( $n = 473$ ) of students reported having SAE programs and 53.9% ( $n = 554$ ) reported not having SAE programs. Table 2 shows the breakdown of SAE participation by students surveyed in each state.

Table 2  
*Student SAE Participation by State (N = 1,027)*

States	Yes		No	
	<i>f</i>	%	<i>f</i>	%
Florida <sup>a</sup>	137	31.9	292	68.1
Indiana <sup>b</sup>	65	40.6	95	59.4
Missouri <sup>c</sup>	155	62.0	95	38.0
Utah <sup>d</sup>	116	61.7	72	38.3
TOTAL	473	46.1	554	53.9

*Note.* Valid percentages are reported; <sup>a</sup> $n = 429$ . <sup>b</sup> $n = 160$ . <sup>c</sup> $n = 250$ . <sup>d</sup> $n = 188$ .

It was also outlined as important in this study to examine the perceived availability of school resources for student SAE programs. Students were provided operational definitions of the resources listed as identified in literature, and reported the availability of different SAE resources by answering *yes* or *no* as to whether they perceived the resources could be used at their school by students for a SAE program. Table 3 depicts the school resources perceived available for student SAE program use by state. Students enrolled in Florida schools perceived having a higher percentage of on-campus land labs (71.7%,  $n = 306$ ), school farm/project centers (72.4%,  $n = 305$ ), and greenhouses (81.9%,  $n = 348$ ) available for use with their SAE. The most prominent school resource

perceived available for student SAE programs use in Indiana (77.1%,  $n = 121$ ) and Missouri (88.5%,  $n = 224$ ) were mechanic/woodworking labs. Greenhouses (67.0%,  $n = 126$ ) and mechanic/woodworking labs (93.7%,  $n = 174$ ) were the school resources perceived most available for student SAE program use in Utah. More than half of the students in each state perceived not having aquaculture tanks available as a resource at their school. Similarly, less than a quarter of students perceived having access to a meat/food science laboratory at their school, except in Indiana (48.7%,  $n = 75$ ). In addition, less than one-fifth of students surveyed in all four states perceived having veterinary technology laboratories available for SAE use at their schools.

Table 3  
*School Resources Perceived Available for Student SAE Program Use (N = 1,038)*

School Resources	Florida <sup>a</sup>		Indiana <sup>b</sup>		Missouri <sup>c</sup>		Utah <sup>d</sup>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
On-campus land lab								
Yes	306	71.7	50	33.8	76	30.9	49	26.8
No	121	28.3	98	66.2	170	69.1	134	73.2
School farm/project center								
Yes	305	72.4	62	40.8	33	13.4	36	19.9
No	116	27.6	90	59.2	213	86.6	145	80.1
Greenhouse								
Yes	348	81.9	76	48.7	139	55.6	126	67.0
No	77	18.1	80	51.3	111	44.4	62	33.0
Aquaculture tanks								
Yes	147	34.8	56	36.6	29	11.8	7	3.9
No	276	65.2	97	63.4	216	88.2	174	96.1
Mechanic/woodworking lab								
Yes	256	60.5	121	77.1	224	88.5	174	93.7
No	167	39.5	36	22.9	29	11.5	12	6.3
Floral design lab								
Yes	56	13.3	26	17.2	47	19.1	81	44.0
No	366	86.7	125	82.8	199	80.9	103	56.0
Meat/food science lab								
Yes	33	7.8	75	48.7	34	13.8	48	26.5
No	391	92.2	79	51.3	213	86.2	133	73.5
Veterinary technology lab								
Yes	60	14.1	12	7.9	0	0.0	33	18.4
No	365	85.9	140	92.1	245	100.0	146	81.6

*Note.* Valid percentages are reported. Frequency and valid percentage reflect usable responses to each item. Tabular data totals may differ from each state's *n* due to missing data or non-response to particular items; <sup>a</sup>*n* = 432. <sup>b</sup>*n* = 162. <sup>c</sup>*n* = 253. <sup>d</sup>*n* = 191.

Researchers identified describing student perceptions on teacher SAE encouragement for as the third objective of this study. From the data in Table 4, it appears that in Florida (92.2%, *n* = 119), Indiana (95.3%, *n* = 61), Missouri (96.7%, *n* = 146), and Utah (98.3%, *n* = 113) more students with SAE programs

believed their teacher encouraged every student to have a SAE than students without SAE programs. Approximately 30.5% or less of students without SAE programs in the four states believed their teacher did not encourage every student to have a SAE.

Table 4  
 Student perceptions on teacher encouragement for every student to have a SAE (N = 921)

States		Teacher Encouragement			
		Yes		No	
		<i>f</i>	%	<i>f</i>	%
Florida	Students without a SAE <sup>a</sup>	186	80.5	45	19.5
	Students with a SAE <sup>b</sup>	119	92.2	10	7.8
Indiana	Students without a SAE <sup>c</sup>	57	69.5	25	30.5
	Students with a SAE <sup>d</sup>	61	95.3	3	4.7
Missouri	Students without a SAE <sup>e</sup>	68	81.9	15	18.1
	Students with a SAE <sup>f</sup>	146	96.7	5	3.3
Utah	Students without a SAE <sup>g</sup>	59	89.4	7	10.6
	Students with a SAE <sup>h</sup>	113	98.3	2	1.7

Note. Valid percentages are reported; <sup>a</sup>*n* = 231. <sup>b</sup>*n* = 129. <sup>c</sup>*n* = 82. <sup>d</sup>*n* = 64. <sup>e</sup>*n* = 83. <sup>f</sup>*n* = 151. <sup>g</sup>*n* = 66. <sup>h</sup>*n* = 115.

The fourth objective of this study identified by researchers was to examine the frequency of SAE help from teachers received by students. Help was defined as SAE supervision by the teacher. In Indiana (32.3%, *n* = 20), Missouri (36.2%, *n* = 51), and Utah (38.7%, *n* = 43) more

students perceived receiving SAE help monthly from their teacher. It appeared in Florida that almost one-third of students perceived SAE help from their teacher was received weekly (32.3%, *n* = 39). The results are shown in Table 5.

Table 5  
 SAE Help from Teacher Received by Students (N = 435)

Frequency of help	Florida <sup>a</sup>		Indiana <sup>b</sup>		Missouri <sup>c</sup>		Utah <sup>d</sup>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Bi-weekly	23	19.0	6	9.7	21	14.9	2	1.8
Weekly	39	32.2	10	16.1	20	14.2	7	6.3
Monthly	24	19.8	20	32.3	51	36.2	43	38.7
Every 3 Months	4	3.3	2	3.2	13	9.2	10	9.0
Every 6 Months	3	2.5	2	3.2	5	3.5	6	5.4
Once a Year	3	2.5	9	14.5	5	3.5	18	16.2
Only in the Summer	1	0.8	6	9.7	6	4.3	13	11.7
Never	24	19.8	7	11.3	20	14.2	12	10.8

Note. Only students who reported having a SAE responded to this question. Valid percentages are reported; <sup>a</sup>*n* = 121. <sup>b</sup>*n* = 62. <sup>c</sup>*n* = 141. <sup>d</sup>*n* = 111.

The final objective of this study was to describe student level of agreement on factors influencing SAE participation. Students responded to 12 statements using a Likert-type scale to identify their level of agreement with

the factor's influence on their SAE participation, with 1 indicating *Strongly Disagree* and 5 indicating *Strongly Agree*. As seen in Table 6, students in Florida, Indiana, Missouri, and Utah neither agreed or disagreed that enjoyment in

agricultural education courses, parental and teacher support and encouragement, availability of resources (money or facilities), and the opportunity for awards and recognition made them more willing to participate in SAE programs. Missouri ( $M = 4.14$ ,  $SD = 0.92$ ) and Utah ( $M = 4.12$ ,  $SD = 0.87$ ) students agreed that the skills they could develop through a SAE

would be beneficial, and only Utah ( $M = 4.01$ ,  $SD = 0.96$ ) students agreed that their parents supported their participation in SAE programs. Students in Florida, Indiana, Missouri, and Utah on average disagreed that involvement in other school and community activities decreased their participation in SAE programs.

Table 6  
Level of Agreement by Students with Factors Influencing SAE Participation ( $N = 1,038$ )

Factors	Florida <sup>a</sup>		Indiana <sup>b</sup>		Missouri <sup>c</sup>		Utah <sup>d</sup>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Participating in SAEs makes me enjoy agricultural education courses more.	3.63	1.24	3.52	1.12	3.87	4.01	3.67	1.04
The skills I can develop through a SAE will be beneficial to my future.	3.74	1.13	3.85	1.10	4.14	0.92	4.12	0.87
My parents support my participation in SAEs.	3.68	1.15	3.48	1.09	3.89	1.06	4.01	0.96
My parents encourage my participation in SAEs.	3.72	2.44	3.46	1.03	3.85	1.08	3.87	1.05
Having enough money to fund a project makes me more willing to participate in SAEs.	3.68	1.15	3.54	1.12	3.88	1.05	3.81	0.93
The more time my teacher can help with my SAE the more willing I am to participate.	3.45	1.10	3.40	0.99	3.58	1.02	3.52	0.97
I am more willing to participate in SAEs if my school has facilities I can use.	3.61	1.11	3.38	1.10	3.64	1.03	3.46	0.96
I am more willing to participate in SAEs if I have the facilities to use at home.	3.48	1.16	3.47	1.16	3.82	1.03	3.81	1.00
Involvement in other school activities decreases my participation in SAEs.	2.80	1.23	2.78	1.07	2.89	1.18	3.07	1.06
Involvement in community activities decreases my participation in SAEs.	2.76	1.18	2.64	1.02	2.67	1.14	2.71	0.98
The opportunity to receive recognition for my SAE encourages my participation.	3.43	1.13	3.61	0.99	3.76	1.03	3.52	1.02
The opportunity to receive awards for my SAE encourages my participation.	3.48	1.17	3.50	1.12	3.82	1.05	3.63	1.06

Note. Scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree or Disagree; 4 = Agree; 5 = Strongly Agree; <sup>a</sup> $n = 432$ . <sup>b</sup> $n = 162$ . <sup>c</sup> $n = 253$ . <sup>d</sup> $n = 191$ .

### Conclusions, Implications, and Recommendations

According to the integrated three-component model of agricultural education, SAE participation is believed to be a foundational piece of a student's experience. If agricultural education programs are to follow the model, all students should not only be engaged in classroom instruction and agricultural youth organizations, but SAE programs as well (Phipps & Osborne, 1988). The results of this study show that SAE involvement by the students surveyed in Florida, Indiana, Missouri, and Utah does not adequately represent the integrated three-component model. Of the students surveyed in this study from the four states, approximately 46.0% reported having SAE programs. These numbers support prior research that student SAE participation is declining (Croom, 2008).

Earlier research conducted by Steele (1997) and Wilson and Moore (2007) stated that a lack of facilities was identified by agricultural educators as a factor that influenced student SAE participation. Before a relationship can be identified between SAE participation and the availability of resources at school, it was necessary to describe what school resources were perceived available for student SAE program use. In Florida greenhouses, on-campus land labs, and a school farm/project center were most available for SAE use by students surveyed. Students surveyed in Indiana reported mechanic/woodworking labs, greenhouses, and meat/food science labs to be the most common resources perceived available for use in their schools. Mechanic/woodworking labs, greenhouses, and on-campus land labs were the most prevalent resources perceived available for SAE use by students surveyed in Missouri. In Utah, students perceived availability of mechanic/woodworking labs, greenhouses, and floral design labs for SAE use at school. Overall, it appeared that in all four states, the perceived availability of veterinary technology labs and aquaculture tanks at the schools was low according to the students surveyed in this study.

The amount of encouragement a student receives from their teacher to have a SAE was

also identified as a factor influencing participation. Thirty percent or less of the students without a SAE project surveyed in the four states believed their teacher did not encourage every student to have a SAE program. It appeared in Florida, Indiana, Missouri, and Utah, almost all students with SAE programs believed their teacher encouraged every student to have a SAE program. Overall it can be concluded that more students with SAE programs believed their teacher encouraged every student to have a SAE than students who did not have SAE programs in Florida, Indiana, Missouri, and Utah. Teacher encouragement to participate in SAE programs did not appear to be consistent among the students.

Students surveyed in Florida, Indiana, Missouri, and Utah who reported having SAE programs were also asked to identify the perceived frequency of SAE help from their teacher they received. In Indiana, Missouri, and Utah, almost one-third of students perceived receiving SAE help monthly. A similar number was perceived by students surveyed in Florida for weekly SAE help; however, almost between 10.8% and 19.8% of the students surveyed perceived they never received SAE help from their teacher. Therefore, the perceived frequency of SAE help from a teacher students received did not seem to be consistent among programs or states.

Many factors are thought by agricultural teachers to influence student SAE participation such as lack of time, lack of facilities at school or home, low student desire, and parental support and encouragement. Recognition, awards, and skill development are other factors thought to be positive influencers for student SAE participation (Stewart & Birkenholz, 1991). The results of this study show that according to the students surveyed in Florida, Indiana, Missouri, and Utah, enjoyment in agricultural education courses, parental and teacher support and encouragement, adequate resources (money or facilities), and opportunities for awards and recognition neither encouraged or discouraged student SAE participation. However, students surveyed in Missouri and Utah did believe the skills they could develop through a SAE program would be beneficial to their future. There was a consensus of disagreement by

students surveyed in the four states that involvement in other school and community activities decreased their participation in SAE programs. This finding is contrary to previous studies in which agricultural teachers felt a lack of time prevented students from participating in SAE programs (Steele 1997; Wilson & Moore, 2007).

Through the lens of Ajzen's (1991) TPB, these findings suggest that the students' attitude toward factors influencing SAE participation was relatively neutral. Factors such as enjoyment in agricultural education courses, parental and teacher support and encouragement, adequate resources (money or facilities), and opportunities for awards and recognition did not make SAE participation favorable or unfavorable. While skill development did make the behavior of participating in SAE programs favorable, students did not believe community and school involvement made SAE participation unfavorable either.

A small survey of student SAE participation and perceptions in agricultural education programs was accomplished through this study in Florida, Indiana, Missouri, and Utah. Even though the results reflect the perceptions of students surveyed, several implications can be drawn for discussion.

For agricultural education teachers, it is a hard task to motivate students to participate in SAE programs. Previous findings, based off the perceptions of teachers themselves, would say that the best way to encourage student participation is to provide numerous award and recognition opportunities (Stewart & Birkenholz, 1991). However, according to the students in this study, awards and recognition neither positively nor negatively influenced SAE participation. At the same time, more of the students without SAE programs did not feel their teacher encouraged every student to have a SAE program. Several of the factors agricultural teachers assumed lessened student SAE participation (Retallick, 2010; Steele, 1997; Whaley & Lucero, 1993; Wilson & Moore, 2007) were not influential at all from a student's perspective according to this study. Educators must be cognizant to avoid stereotypes towards students who do not meet the mold of the typical SAE participant in their program and motivate

all students to be involved in agricultural experiences. Students who appear to be heavily involved in additional school and community activities may have the potential to participate in the highest quality SAE programs when given the opportunity. Agricultural educators must begin assessing the specific motivators for individual students.

Although students in this study responded that the availability of resources at school or home neither encouraged or discouraged their SAE participation, the results showing what types of resources are perceived available for SAE use at schools gives us a picture of potential for new opportunities. Approximately three types of school resources for student SAE program use were prominent in each state, while others are selectively seen. Our agricultural education programs must begin offering more diverse resources and facilities at schools, not only for instructional purposes, but also for student SAE use. Anyadoh and Barrick (1990) found that a positive relationship exists between the availability of school facilities and the quality of SAE programs. A diverse set of experiences provided at the school would meet the demand of varied students' interests and give a setting to house their inquiry into agriculture. It is also important to note that agricultural educators must begin realizing the potential SAE opportunities that surround students while they are in the agricultural classroom. Further utilization of school facilities and resources for student SAE programs could increase participation exponentially.

A factor that may not have been considered before as influential to student SAE participation is the amount of help received from teachers. We can assume from this study that most teachers, on average, provided students with SAE help on a monthly basis. If assistance was provided more, and SAE programs were properly supervised by the teacher, would students without SAE programs be more likely to participate? Some students in the study claim their teacher never provided SAE help. Students might be more apt to participate in SAE programs if they felt they had stronger support and direction from their agricultural teacher throughout the duration of the project. It is noted that there are only 24 hours in a day and a

teacher cannot be expected to be in all places at once. To improve student SAE program supervision, the responsibility can be shared by the teacher with the parents of students and program supporters. Teachers should communicate this need early in a student's SAE and work with the parents and community to provide adequate supervision and help to ensure a successful program.

To further improve agricultural education programs and the SAE component, we can turn to our teacher educator programs. For teacher educators, this study provides insight into an area that perhaps demands more focus. It is assumed that student teachers will graduate with a comprehensive knowledge of what is required in agricultural education programs. However, if they do not have a grasp on supervising SAE programs, this portion of the integrated three component model will be neglected. Teacher educators should begin to help student teachers see how to integrate SAE into classroom instruction and agricultural youth organization participation more comprehensively by providing more guidance and focus in the area of SAE. Also, ensuring the future teachers understand and recognize their role as a supervisor will improve the students' experiences. To accomplish this, teacher educators can incorporate more shadowing

experiences related to SAE earlier in the teacher preparation coursework and require SAE visit completion during clinical experiences.

Results of the study open the door to several research opportunities in SAE. Not only should this study be replicated in other states to provide a more holistic picture, but additional exploration should also be conducted to address the differences in perceptions between students and teachers related to SAE. It would also be intriguing to discover how agricultural education students are motivated to participate in SAE programs. What motivators are the most influential? The identification of influential SAE participation factors by students would provide a larger perspective on barriers. Recommendations for future research also include defining what constitutes proper and adequate supervision of a student's SAE project by an agricultural educator. The identification of which types of school SAE resources lend themselves to higher student SAE participation would be of much interest to agricultural educators. Relationships between factors influencing students and their SAE participation should be explored to determine the impact of the perceived behavioral control component of Ajzen's (1991) TPB on intention to perform said behavior.

## References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. doi: [10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22(5), 453–474. doi: [10.1016/0022-1031\(86\)90045-4](https://doi.org/10.1016/0022-1031(86)90045-4)
- Anyadoh, E. B., & Barrick, R. K. (1990). *Relationship between selected teacher program and student characteristics and student scores on their supervised occupational experience program in Ohio* (Report No. CE 055 845). Columbus: The Ohio State University. (ERIC Document Reproduction Service No. ED 324 411)
- Barrick, R. K., Hughes, M., & Baker, M. (1991). A review and synthesis of research on supervised experience in agriculture. *Summary of Research*, Department of Agricultural Education, The Ohio State University, 65, 1–13.

- Beeman, C. E. (1967). Perceptions of school administrators, vocational agriculture teachers, and members of the lay public concerning the changing role of vocational agriculture in Mississippi. *Dissertation Abstracts*, 28, 1724A.
- Berkey, A. L., & Sutphin, H. D. (1984, December). *Status and importance/support for supervised occupational experience programs (SOEP) as perceived by New York vocational agriculture teachers and their administrators*. Paper presented at the Annual National Agricultural Education Research Meeting, New Orleans, LA. (ERIC Document Reproduction Service No. ED 251 653)
- Boone, H. N., Doerfert, D., & Elliot, J. (1987). Supervised occupational experience programs: History, philosophy, current status, and future implications. *Journal of the American Association of Teacher Educators in Agriculture*, 28(4), 57–64. doi: [10.5032/jaatea.1987.04057](https://doi.org/10.5032/jaatea.1987.04057)
- Camp, W. G., Clarke, A., & Fallon, M. (2000). Revisiting supervised agricultural experience. *Journal of Agricultural Education*, 41(3), 13–22. doi:[10.5032/jae.2000.03013](https://doi.org/10.5032/jae.2000.03013)
- California Department of Education. (1998). *Supervised occupational experience program agricultural education*. Retrieved from [www.nww.org/qwbl/tools/caltoolkit/Factsheets/Supervisedoccupationalexperienceprogram.pdf](http://www.nww.org/qwbl/tools/caltoolkit/Factsheets/Supervisedoccupationalexperienceprogram.pdf)
- Case, L. D. (1983). *Factors affecting the supervised occupational experience program in vocational agriculture* (Doctoral dissertation). University of Missouri, Columbia, MO.
- Cheek, J. G., Arrington, L. R., Carter, S., & Randell, R. S. (1994). Relationship of supervised agricultural experience program participation and student achievement in agricultural education. *Journal of Agricultural Education*, 35(2), 1–5. doi: [10.5032/jae.1994.02001](https://doi.org/10.5032/jae.1994.02001)
- Croom, D. B. (2008). The development of the integrated three–component model of agricultural education. *Journal of Agricultural Education*, 49(1), 110–120. doi: [10.5032/jae.2008.01110](https://doi.org/10.5032/jae.2008.01110)
- Dillman, D. A., Smyth, J., & Christian, L. (2009). *Internet, mail, and mixed–mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: Wiley & Sons.
- Doerfert, D. L. (Ed.). (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011–2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications
- Dyer, J. E., & Osborne, E. W. (1995). Participation in supervised agricultural experience programs: A synthesis of research. *Journal of Agricultural Education*, 36(1), 6–14. doi: [10.5032/jae.1995.01006](https://doi.org/10.5032/jae.1995.01006)
- Dyer, J. E., & Osborne, E. W. (1996). Developing a model for supervised agricultural experience program quality: A synthesis of research. *Journal of Agricultural Education*, 37(2), 24–33. doi: [10.5032/jae.1996.02024](https://doi.org/10.5032/jae.1996.02024)
- Dyer, J. E., & Williams, D. L. (1997). Supervision of supervised agricultural experience programs: A synthesis of research. *Journal of Agricultural Education*, 38(4), 59–67. doi: [10.5032/jae.1997.04050](https://doi.org/10.5032/jae.1997.04050)
- Foster, R. M. (1986). Factors limiting vocational agriculture student participation in supervised occupational experience programs in Nebraska. *The Journal of the American Association of Teacher Educators in Agriculture*, 27(4), 45–50. doi: [10.5032/jaatea.1986.04045](https://doi.org/10.5032/jaatea.1986.04045)

- Frankel, J. R., & Wallen, N. E. (2009). *How to design and evaluate research in education*. New York, NY: McGraw–Hill.
- Knobloch, N. A. (1999). The new SAE: Applied. *Agricultural Education Magazine*, 72(3), 16–21. Retrieved from <http://www.naae.org/links/agedmagazine/archive/Volume72/v72i3.pdf>
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Upper Saddle River, NJ: Prentice Hall.
- Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 42(4), 43–53. doi: [10.5032/jae.2001.04043](https://doi.org/10.5032/jae.2001.04043)
- Moore, G. E. (1987). The status of agricultural education prior to the Smith–Hughes act. *The Agricultural Education Magazine*, 59(8), 8–10. Retrieved from <http://www.naae.org/links/agedmagazine/archive/Volume59/v59i8.pdf>
- NAAE. (2012). *Supervised agricultural experience fact sheet, history of SAE*. Retrieved from [http://www.naae.ca.uky.edu:8080/clearspace\\_community/.../SAE%20History.pdf](http://www.naae.ca.uky.edu:8080/clearspace_community/.../SAE%20History.pdf)
- The National Council for Agricultural Education. (2009). *National quality program standards for secondary (grades 9–12) agricultural education*. Retrieved from [http://www.teamaged.org/council/images/stories/pdf/National\\_Quality\\_Program\\_Standards\\_revised\\_4-29-09.pdf](http://www.teamaged.org/council/images/stories/pdf/National_Quality_Program_Standards_revised_4-29-09.pdf)
- National FFA Organization. (2012). *Introduction to SAE programs* [PowerPoint slides]. Retrieved from <https://www.ffa.org/About/WhoWeAre/SAE/Pages/SAEResources.aspx>
- Phipps, L. J., & Osborne, E. W. (1988). *Handbook on agricultural education in public schools* (5th edition). Danville, IL: Interstate.
- Rayfield, J., & Wilson, E. (2009). Exploring principals' perceptions of supervised agricultural experience. *Journal of Agricultural Education*, 50(1), 70–80. doi: [10.5032/jae.2009.01070](https://doi.org/10.5032/jae.2009.01070)
- Retallick, M. S. (2010). Implementation of supervised agricultural experience programs: The agriculture teachers' perspective. *Journal of Agricultural Education*, 51(4), 59–70. doi: [10.5032/jae.2010.04059](https://doi.org/10.5032/jae.2010.04059)
- Roberts, T. G. (2006). A philosophical examination of experiential learning theory for agricultural educators. *Journal of Agricultural Education*, 47(1), 17–29. doi: [10.5032/jae.2006.01017](https://doi.org/10.5032/jae.2006.01017)
- Steele, R. (1997). Analysis of the continuing decline in use of supervised agricultural experience (SAE) in New York state. *Journal of Agricultural Education*, 38(2), 49–58. doi: [10.5032/jae.1997.02049](https://doi.org/10.5032/jae.1997.02049)
- Stewart, B. R., & Birkenholz, R. J. (1991). Outcomes of changing supervised agricultural experience programs. *Journal of Agricultural Education*, 32(3), 35–41. doi: [10.5032/jae.1991.03035](https://doi.org/10.5032/jae.1991.03035)
- Stimson, R. (1915). The Massachusetts home project plan of vocational agricultural education. *The School Review*, 23(7), 474–478. doi: [10.1086/436505](https://doi.org/10.1086/436505)
- Swortzel, K. A. (1996). Perceptions regarding planning activities and supervision strategies for supervised agricultural experience programs. *Journal of Agricultural Education*, 37(2), 47–55. doi: [10.5032/jae.1996.02047](https://doi.org/10.5032/jae.1996.02047)

Whaley, D. C., & Lucero, D. (1993). Barriers to successful supervised agricultural experience programs in semi-rural and urban high school agricultural education programs. *Rural Educator*, 14(3), 7-10.

White, P. T., & Pals, D. A. (2004, May). The current status of supervised agricultural experience programs (SAE) in the inland pacific northwest. Paper presented at the *31st Annual National Agricultural Education Research Conference, St. Louis, MO*

Wilson, E. B., & Moore, G. E. (2007). Exploring the paradox of supervised agricultural experience programs in agricultural education. *Journal of Agricultural Education*, 48(4), 82-92. doi: [10.5032/jae.2007.04082](https://doi.org/10.5032/jae.2007.04082)

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