

ABSTRACT

FORD, JILLIAN CASEY. School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences. (Under the direction of Dr. Misty Lambert.)

Supervised Agricultural Experience (SAE) is one of three main components of School-Based Agricultural Education (SBAE) (The National Council for Agricultural Education, n.d.), but implementation has varied across SBAE programs over time (Retallick, 2010; Shoulders & Toland, 2017; Wilson & Moore, 2007). The philosophy for a new model for SAE, known as SAE for All was adopted in 2015 (The National Council for Agricultural Education, 2015). This dissertation investigated SBAE teachers' perceptions of SAE and understanding of SAE for All, diffusion of SAE for All, and implementation of SAE for All across the United States. A quantitative questionnaire was administered through Qualtrics to SBAE teachers in 32 states, receiving 505 useable responses. This article-style dissertation is organized into five chapters including a prologue, three journal articles, and an epilogue.

Article One sought to understand SBAE teacher perceptions of SAE and understanding of the SAE for All model. Participants indicated they value SAE and believe it should be a graded component. Participants also indicated a high level of agreement with many barriers previously revealed in research. Approximately one-third of participants correctly identified the SAE for All category for each scenario. Recommendations for addressing perceived barriers and increasing SBAE teacher understanding of SAE for All categories are addressed.

Article Two investigated the diffusion of SAE for All. When considering the perceived attributes of SAE for All, participants indicated a high relative advantage and compatibility with their SBAE programs but identified the model as complex to implement. Participants were also asked to identify communication channels which indicated state-level professional development,

SAE for All website and guides, and other teachers as their main sources of information regarding SAE for All. Recommendations for practice to strengthen the diffusion of SAE for All among SBAE teachers are provided.

Article Three investigated SAE for All implementation on a national level. Participants had students completing Foundational SAEs at the highest rates, with Placement and Entrepreneurship SAEs as the most conducted Immersion SAEs. Research SAEs were implemented in the smallest numbers, while over half of participants had School-Based Enterprise and Service Learning SAEs taking place in their programs. Participants also recognized many resources available to implement SAEs, but the majority were utilizing resources they had available on campus. AET was the most utilized record book by participants. Recommendations for continued adoption and implementation of SAE for All are provided.

School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised
Agricultural Experiences

by
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A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Doctor of Education

Agricultural and Extension Education

Raleigh, North Carolina

2024

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DEDICATION

For my sweet William Louis. Never be afraid to work hard in pursuit of your dreams.

BIOGRAPHY

Jillian Ford is a North Carolina native. Growing up she knew she wanted to be a teacher, but after taking a horticulture class her freshman year of high school and joining the National FFA Organization, she learned which discipline she wanted to pursue. After earning her bachelor's degree in 2012 and master's degree in 2013 in Agricultural Education from NC State University, Jillian taught school-based agricultural education in eastern North Carolina for eight years. Jillian is passionate about preparing pre-service agriculture teachers for success in their future programs and offering practical support to in-service agriculture teachers. Jillian is married to her loving husband, Chris and welcomed their baby boy, William to their family in 2023.

ACKNOWLEDGMENTS

I have been so fortunate to be surrounded by supportive colleagues, family, and friends throughout my doctoral studies. Thank you to the faculty and staff in the Agricultural and Human Sciences Department for being the most welcoming and encouraging group. A special thank you to my advisor and committee chair, Dr. Misty Lambert. Thank you for the extensive amount of time that you have poured into me over the last three years to prepare me to be a strong researcher and scholar. I am grateful for your guidance, mentorship, and friendship. I could not have achieved the level of success that I have experienced without you. Thank you to my committee members, Dr. Travis Park, Dr. Joseph Donaldson, and Dr. Barbara Fair. Thank you all for sharing your time and expertise to ensure that I am prepared to find success in the agricultural education profession.

I am beyond grateful to my family and friends that have been my cheerleaders and supporters throughout my studies. Chris, I am especially grateful for you encouraging me and supporting my dream. I know I can always count on you to be in my corner and serve as a voice of reason. Thank you as well to my parents, Lee and Pam Casey, for not only instilling in me a love of agriculture and learning but also for the many meals during my studies and helping me make this dream a reality.

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Chapter 1: Prologue

Introduction and Significance of the Study

Neither skill nor business ability can be learned from books alone, nor merely from observation of the work and management of others. Both require active participation, during the learning period, in productive farming operations of real economic or commercial importance (Stimson, 1919, p. 32).

As highlighted in Rufus Stimson's (1919) book, *Vocational Agricultural Education*, School-Based Agricultural Education (SBAE) is rooted in the value of a practical and pragmatic learning experience for students (Talbert et al., 2014). Today, this is achieved through the three components of SBAE including Supervised Agricultural Experience (SAE), classroom instruction, and leadership development (FFA) (The National Council for Agricultural Education, n.d.). SAE, specifically, is the work-based learning component of this model (The National Council for Agricultural Education, n.d.). Work-based learning and supervised projects have been part of SBAE since the Smith-Hughes Act in 1917 (Talbert et al., 2014).

SBAE teachers have said they value SAE (Retallick, 2010; Wilson & Moore, 2007), but it is not being implemented consistently across programs (Lewis et al., 2012; Marzolino & McKim, 2022; Shoulders & Toland, 2017; Steele, 1997; Wilson & Moore, 2007). Due to this lack of alignment and many other barriers, the National Council for Agricultural Education (the Council) established a committee to create the SAE for All model, which was adopted in 2015 (The National Council for Agricultural Education, 2015). Unfortunately, SBAE teachers have been slow to learn about, fully understand, and adopt the new model (Doss & Rayfield, 2019; Ford & Lambert, 2023a, 2023b). If SAE for All is going to be the solution to the SAE paradox,

then it is imperative that we understand the reality of how it is being implemented in SBAE programs across the country.

Definitions

In this dissertation, the definition for **Supervised Agricultural Experience** is adopted from The National Council for Agricultural Education's SAE for All Teacher Guide.

Supervised Agricultural Experience (SAE) is a student-led, instructor supervised, work-based learning experience that results in measurable outcomes within a predefined, agreed upon set of Agriculture, Food and Natural Resources (AFNR) Technical Standards and Career Ready Practices aligned to a career plan of study (The National Council for Agricultural Education, 2017, p. 2).

The term **SAE for All** will be considered the model adopted by the National Council for Agricultural Education (2015) that includes foundational and immersion SAE components (See Figure 1.1).

Figure 1.1

Overview of the SAE for All model.



Note. Adapted from “SAE for All Evolving the Essentials Immersion SAE” webpage (SAE for All, n.d.).

Foundational SAE will be defined using The National Council for Agricultural Education’s SAE for All Teacher Guide.

The Foundational SAE is conducted by all students in the agricultural education program including students that are on a four-year sequence and those who enroll for a semester. It

consists of the following five components: 1) Career Exploration and Planning, 2) Employability Skills for College and Career Readiness, 3) Personal Financial Management and Planning, 4) Workplace Safety, 5) Agricultural Literacy (2017, p. 10-11).

Immersion SAE will be defined using The National Council for Agricultural Education's SAE for All Evolving the Essentials webpage.

Immersion SAEs allow students to build upon their Foundational SAE activities by gaining real-world, hands-on experience within their chosen career path. Students will enhance their agriculture industry knowledge, gain financial independence and management skills, and determine whether the career choice aligns with their interests and abilities — all while supporting their agricultural education coursework. (SAE for All, n.d.).

We will define **SAE for All Implementation** as utilizing the SAE for All model in an SBAE program. SBAE teachers are requiring students to maintain Foundational SAEs and related Immersion SAEs where appropriate.

SBAE Leaders will be defined as lead agricultural education stakeholders in each state. These leaders were identified by their membership in the National Association of State Supervisors of Agricultural Education (NASAE). For most states the SBAE leader contacted in this study was either the head state supervisor or the lead FFA staff. The SBAE leaders were utilized as gatekeepers to the SBAE teacher population within their respective states.

Agricultural Experience Tracker (AET) will be defined using the overview below:

The AET system is a comprehensive student-centered agricultural education management system used annually by over 600,000 students each school year! AET is designed to

help students track their educational experiences (classroom, SAE, and FFA) and document them to help them learn life skills and improve their decision-making (AET, n.d.).

School-Based Agricultural Education (SBAE) will be defined as agricultural education courses taught in secondary schools. SBAE has three main components, classroom instruction, leadership development (FFA), and work-based learning (SAE) (National FFA Organization, n.d.).

The National Council for Agricultural Education (The Council) will be defined according to their website, stating that The Council...

serves School-based agricultural education. Since its beginning in December 1983, The Council has provided leadership for stakeholders in agriculture, food, fiber and natural resources systems education. The Council identifies important opportunities and needed resources for agricultural education and drives action to support the development and direction focusing on academic and career success for all students. (The National Council for Agricultural Education, n.d.).

The **National FFA Organization (FFA)** is the intracurricular student organization for SBAE. The mission of The National FFA Organization is that “FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education.” (National FFA Organization, n.d.).

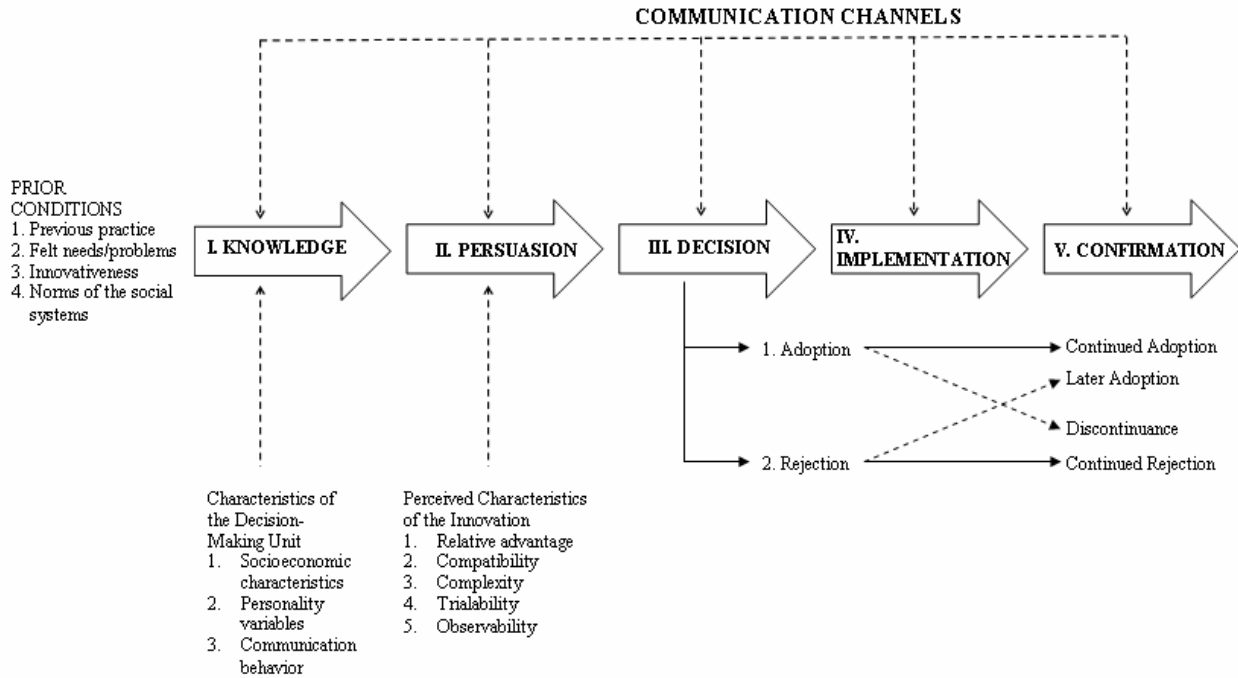
Framework

This dissertation is framed by the Diffusion of Innovations Theory (Rogers, 2003). Each article focuses on a different component of the innovation-decision process made by SBAE

teachers to incorporate SAE and specifically SAE for All into their classrooms. This study sought to identify where SBAE teachers fall within these five stages in relation to their use of SAE for All.

Figure 1.2

Model of the five stages of the innovation-decision process.



Note. Adapted from “Diffusion of Innovations” by Everett M. Rogers (2003, p. 170).

Article 1:

Article 1 investigates the social system norms of SAE among SBAE teachers. This component is key for understanding the beliefs of teachers. Article 1 also investigates participants’ current knowledge of SAE for All categories.

Article 2:

Article 2 specifically investigates the five stages of the innovation-decision process and the five perceived characteristics of innovations during the persuasion stage as it applies to the adoption of SAE for All by SBAE teachers throughout the United States.

Article 3:

Article 3 investigates the decision and implementation stages within the innovation-decision process. This article compares the SAE efforts of those that have adopted SAE for All and those that have rejected SAE for All.

Dissertation Purpose

The purpose of this dissertation is to determine the current state of SAE across SBAE programs in the United States. This dissertation specifically investigates diffusion of SAE for All, perceptions of SAE, and understanding and implementation of SAE for All among SBAE teachers.

Dissertation Organization

This dissertation is organized into five chapters. Chapter one contains the introduction and sets the stage for the remaining chapters. Chapter two, three, and four are individual articles related to the study of SAE for All. Chapter five is a summary of the articles and major findings and recommendations for practice and further research.

Research Questions

Each of the three articles sought to understand the current reality of SAE in SBAE programs throughout the United States. The articles build upon each other beginning with SBAE teacher perceptions of SAE and understanding of SAE for All in article 1, followed by the diffusion of SAE for All in article 2, and finally the implementation of SAE for All in article 3. The following research questions guided this study.

Article 1:

1. What are SBAE teachers' perceptions about SAE?
2. To what extent do SBAE teachers understand the SAE for All model?

Article 2:

1. Are SBAE teachers choosing to adopt SAE for All?
2. What are SBAE teachers' experiences with the diffusion of SAE for All?
3. Where are SBAE teachers learning about SAE for All?

Article 3:

1. How are SBAE teachers implementing SAE for All in their programs?
2. What resources are available to SBAE teachers for SAE?
3. How are SBAE teachers having students keep SAE records?

Limitations

There are limitations to this dissertation. Due to the low response rate in the simple random sample pilot study, a convenience sample was utilized for this dissertation. The non-probability sampling method causes selection bias because participants were asked to complete the survey voluntarily (Dillman et al., 2014). Because of the sampling selection, findings are not

generalizable, but may be transferable. The survey for this dissertation was administered between December 2023 and January 2024. Due to the time of year with the holiday season and winter break from school for most of the population happening in the middle of the data collection period, participation in this survey may have been lower than if the survey were administered during a different time of year. Administration of the survey also depended on state SBAE leaders to not only serve as gatekeepers allowing the survey to reach their state's teachers, but also depended on the state SBAE leaders to pass the survey on to the population of interest each time it was requested.

Despite the limitations listed above, this dissertation can still inform SBAE stakeholders about the realities of SBAE teachers' SAE perceptions and how SAE for All is being implemented in these programs. This study is one component adding to the greater empirical research related to SAE implementation and solving the SAE paradox.

Chapter 2: School-Based Agricultural Education Teacher Perceptions and Understanding of Supervised Agricultural Experience

Abstract

SBAE teachers have previously indicated their value of SAE but identified many barriers to implementation. Since the adoption of SAE for All in 2015, there has been a need to investigate the change in teacher perceptions of SAE following the implementation of the newest model of SAE. This study sought to understand SBAE teacher perceptions of SAE and understanding of the SAE for All model. A Qualtrics questionnaire was disseminated to SBAE teachers in 32 states in December 2023-January 2024, garnering 505 usable responses. The questionnaire consisted of 21 statements to rate on a Likert-type scale and a section asking participants to identify the SAE for All category described. Participants indicated that they value SAE and believe it should be a graded component. Participants also indicated a high level of agreement with many barriers previously indicated in research. Approximately one-third of participants correctly identified the SAE for All category for each scenario. Recommendations for addressing perceived barriers and increasing SBAE teacher understanding of SAE for All categories are addressed.

Key Words

Supervised Agricultural Experience, Work-Based Learning, SBAE Teacher Perceptions, SAE for All, SAE Understanding

Introduction and Review of Literature

School-Based Agricultural Education (SBAE) consists of three main components including classroom instruction, leadership development, and work-based learning (Croom, 2008; National FFA Organization, n.d.-a). Leadership development is accomplished through participation in the National FFA Organization while work-based and experiential learning is completed through a Supervised Agricultural Experience (SAE). This three-component model is often depicted as a Venn diagram with equal circles and an equal amount of overlap, resulting in a well-balanced program where students are exposed to classroom, SAE, and FFA components at an equal level. Research tells us that while this may be the ideal SBAE program balance, these components are not being implemented equally by SBAE teachers in programs across the country (Dyer & Osborne, 1995; Retallick, 2010; Marzolino & McKim, 2022; Shoulders & Toland, 2017; Wilson & Moore, 2007). SAE is often the smallest circle, or the non-existent program in many programs (Shoulders & Toland, 2017; Wilson, 2022).

SAE has been a component of SBAE since Rufus Stimson's (1919) home project for farm boys, which involved students working on their own farms (Croom, 2008; Moore, 1988; Smith & Rayfield, 2016). Students were completing practical projects that helped them gain skills they could use to productively farm in the future. These projects fit into one of three categories: improvement, trial, or productive (Stimson, 1919). The three requirements for these projects indicated that they must be completed "a., on a farm, b., under specified conditions and for a specified valuable result, and, c., requiring a thoroughgoing education" (Stimson, 1919, p. 44). While the projects utilized the facilities that students had available at home, they were supervised by the agriculture teacher and students were expected to implement practices they were learning in class (Stimson, 1919).

Today's SBAE students are not the traditional farm boys. There are approximately 1,200,000 SBAE students across the country (National FFA Organization, n.d.-a), and only a portion have a production agriculture background. Due to the massive demographic change in students since the early 1900's and the recognition of the broad field of agriculture, this work-based learning component of SBAE has been renovated multiple times over the years (Moore & Flowers, 1993; The National Council for Agricultural Education, 2015). What began as a home project for farm boys in agriculture classes transformed into what is known as SAE for All today (National FFA Organization, n.d.-a). While the name and categories of work-based learning have changed, each model has maintained a connection to its roots in the home project with teacher supervision, hands-on experience, and practical skill development personalized to each student.

There are many benefits for students that complete SAEs. They are developing skills related to future careers, building relationships with family members, community members, and other students, and receiving recognition through FFA (Ramsey & Edwards, 2012; Retallick, 2010; Rubenstein & Thoron, 2019). For students that enter SBAE with access to family farms or agricultural pursuits, an SBAE teacher could easily help that student start a successful SAE (Ford & Lambert, 2023a, 2023b).

Unfortunately, there have also been many barriers to implementing SAE for every student. Some of these barriers have included teacher time constraints through additional responsibilities, the shift to block scheduling, and a lack of dedicated time to supervise SAEs (Moore et al., 1997; Steele, 1997; Wilson, 2022). Lack of resources at home for students, as well as a lack of parental and community support have also been indicated as barriers (Retallick, 2010; Wilson, 2022; Wilson & Moore, 2007). There also was not a clear definition of SAE, leading to disagreement about what was an SAE (Doss & Rayfield, 2019; Dyer & Osborne,

1995; Retallick, 2010; Wilson & Moore, 2007). The FFA awards programs including FFA Degrees and Agricultural Proficiency Awards have been some of the only guidelines for what *counts* as an SAE for students (Ford & Lambert, 2023).

SAE for All, developed by a committee under the guidance of The National Council for Agricultural Education (The Council) in 2015, is designed to be accessible to every student in every classroom, regardless of their agricultural background (The National Council for Agricultural Education, 2015). SAE for All proposed two types of SAEs: foundational and immersion. Foundational SAEs are designed to be relevant career and life-skill preparation that can benefit every student in every class due to its iterative nature (The National Council for Agricultural Education, 2017a). Designed to grow out of a Foundational SAE, Immersion SAEs immerse the student in a personalized experience to build relevant skills for the student's future (The National Council for Agricultural Education, 2017a). Immersion SAEs are most in alignment with the traditional types of work-based learning projects like those of Stimson's (1919) farm boy era and SAE categories in more recent SAE models. Consistent with previous research, SBAE teachers have been slow to understand and adopt SAE for All for their problems (Doss & Rayfield, 2019; Ford & Lambert, 2023).

With the changing demographic of students in SBAE, it makes sense that a portion of those drawn to becoming SBAE teachers are also removed from production agriculture. This shift, not only in students, but in those making the programmatic decisions in an SBAE program has most likely impacted SAE implementation. As we consider the previous research in this area, little is known about current SBAE teachers' perceptions towards SAE or understanding of SAE for All categories.

Theoretical Framework

This study was guided by Rogers' (2003) Diffusion of Innovations Theory. The innovation in this study is SAE for All. The Diffusion of Innovations Theory posits that there are five stages within a person's decision to adopt an innovation, including (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation (Rogers, 2003). This study focuses on the prior conditions and the knowledge stage of the innovation-decision process. Prior conditions leading to the innovation-decision process include (1) previous practice, (2) felt needs/problems, (3) innovativeness, and (4) norms of the social systems (Rogers, 2003). By investigating current SBAE teachers' perceptions of SAE, we will better understand their previous practice, problems, and norms of SAE implementation in programs across the country.

Purpose and Objectives

The purpose of this study is to understand current SBAE teacher perceptions about SAE and understanding of the newest model for SAE. This research is part of a larger study investigating SAE on the national level. The questions guiding this study include:

1. What are SBAE teachers' perceptions about SAE?
2. To what extent do SBAE teachers understand the SAE for All model?

Methods

This study utilized a cross-sectional quantitative survey design with the questionnaire instrument in Qualtrics administered via email to participants. Survey research was selected for this study because it "provides a quantitative or numeric description of trends, attitudes, or

opinions of a population by studying a sample of the population” (Creswell & Creswell, 2018, p. 12). To encourage participation in this study, responses were incentivized with a drawing for one of four Amazon gift cards (Dillman et al., 2014).

Participants

The population of interest for this study is all SBAE teachers in the United States. According to the 2021 National Supply and Demand Study, there are 13,349 agriculture teachers across the country (Smith et al., 2022). A pilot study was conducted September-November 2023 utilizing a random sample acquired from the National FFA Organization. Over the course of four rounds of administering the survey following approved IRB contacts, the pilot study utilized 350 emails, garnering only 27 completed surveys for a response rate of 7.71%. Due to the low response rate, we decided to modify the sampling design and opted for a convenience sample to increase survey participation. The convenience sample was accessed by requesting state SBAE leaders share the survey within their respective states. After an approved amendment to our IRB application, emails with an invitation to participate were sent to one SBAE leader of forty-six states in December 2023. SBAE leaders could not be identified for Hawaii, Massachusetts, Maine, or Vermont. SBAE leaders were identified through the membership roster found on the National Association of Supervisors of Agricultural Education (NASAE) website. Two current NASAE members from North Carolina and one faculty member from NC State University provided recommendations for which SBAE leader to contact in states with multiple NASAE members.

SBAE leaders of 32 states agreed to distribute the survey to their teachers. According to the 2022 State-Level Supply and Demand Profiles (Smith et al., 2023), the number of SBAE teachers in the participating states totals 11,034. Between December 2023 and January 2024,

SBAE leaders were asked to share the survey three times, in alignment with guidance from Dillman et al. (2014). Over 500 ($n = 505$) usable responses were received from 28 states (see Table 2.1).

Table 2.1

Participant Demographics (n=505).

Demographics	<i>f</i>	%
Gender		
Male	190	37.6
Female	311	61.6
Non-binary/3 rd gender	2	0.4
Prefer not to say	1	0.2
Did not answer	1	0.2
Community		
Rural	339	67.1
Suburban	108	21.4
Urban	57	11.3
Did not answer	1	0.2
Educational Background		
Traditional agricultural education college preparation program	366	72.5
College preparation in teaching, but not agricultural education	23	4.6
Lateral entry from non-teaching, non-agriculture profession	14	2.8
Lateral Entry from a non-teaching, technical agriculture profession	76	15.0
Other	26	5.1
SAE Lead or Co-Lead in SBAE Program		
Yes	444	87.9
No	60	11.9

Demographics	<i>f</i>	%
Did not answer	1	0.2
Age		
20-29	166	32.9
30-39	125	24.8
40-49	101	20.0
50-59	78	15.5
60-69	27	5.4
Did not answer	8	1.6
Years of SBAE Teaching Experience		
0-5	183	36.2
6-10	99	19.6
11-15	74	14.7
16-20	62	12.3
21-25	34	6.7
26-30	28	5.5
31-35	15	3.0
36+	8	1.6
Did not answer	2	0.4

Instrumentation and Data Analysis

A questionnaire was designed for the study. The questionnaire consisted of multiple sections related to the diffusion of SAE for All. The components related to perceptions of SAE and understanding of SAE for All are included in this study. The perceptions of SAE questions were modified slightly from Wilson and Moore's (2007) study concerning teacher attitudes towards SAE. These 21 statements were listed across three separate pages and asked participants

to identify their level of agreement with the statements using a 5-point Likert scale where 1 = strongly disagree, 2 = somewhat disagree, 3 = Neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree. The understanding questions were modified from Doss and Rayfield's (2019) study related to SBAE teachers' ability to identify SAE for All categories based on scenarios (see Table 2.2). Each scenario was presented on a separate page and asked participants to select which SAE category was the most appropriate for the SAE activity presented. Participants could choose from 11 categories, including Foundational and the 10 Immersion categories: Entrepreneurship, Ownership, Placement, Internship, Experimental Research, Analytical Research, Invention Research, School-Based Enterprise, and Service Learning.

Table 2.2

SAE for All Scenarios and Appropriate Categories.

Scenario	SAE for All Category
After completing a career interest inventory, a student interviews a worker at the local grain elevator to determine their interest in a possible career in the agriculture field.	Foundational
A student surveys FFA members and nonmembers on locally grown foods to compare knowledge levels of local agricultural products then compiles the data to present to the local Farm Bureau.	Immersion – Analytical Research
A student grows vegetables in raised beds at school to sell at the local farmer's market with two classmates. The project is financed by the school but pays the students a portion of the profit from the sales.	Immersion – School-Based Enterprise
A student purchases a steer that will be raised at his/her parent's facilities. The steer will be exhibited throughout the year and sold at market.	Immersion – Ownership
A group of students learn about a high level of food insecurity in their community and work with the local extension office to establish, market, and maintain a community garden.	Immersion – Service Learning

Validity of the survey was established through a panel of experts between August and September 2023. The panel of experts ($n = 5$) consisted of agricultural education university faculty and staff from different universities with an extensive knowledge of SAE for All and/or survey design. Suggested changes from the panel of experts were applied to the survey prior to pilot testing ($n = 27$). Minor changes were made to the scenario statements for clarity following the pilot study. Data was collected through Qualtrics and analyzed using SPSS statistical software.

Findings

Research Question 1: What are SBAE teachers' perceptions about SAE?

The 25 statements about perceptions were divided into five categories including beliefs, resources, self-efficacy, support, and time. Responses from participants indicated that SBAE teachers see value in SAE but there are barriers to implementation.

In the beliefs category (see Table 2.3), 96.4% of participants agreed that SAE provides real life experiences to their students. There was agreement among 79.9% of participants that SAE should be graded. A total of 77.7% of participants agreed that SAE improves students' mastery of course concepts. Seventy-five percent of participants agreed that SAE gets students started in an agricultural career. A commonly indicated barrier to SAE implementation is recordkeeping, but only 37.8% of respondents agreed that recordkeeping for SAE was too complicated.

Table 2.3*Frequency of SBAE teacher perceptions regarding SAE beliefs.*

Belief statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I believe SAE provides real life experiences for the student	333	152	12	4	2	503
I believe SAE should be a part of a student's grade	238	160	37	39	24	498
I believe SAE improves student mastery of course objectives	182	209	73	30	9	503
I believe SAE gets students started in an agricultural career	153	222	74	39	12	500
SAE recordkeeping is too complicated	57	133	106	132	75	503

When considering SAE resources (see Table 2.4), 71.7% agreed that students did not have access to resources to implement SAE at their homes and half of participants (50.6%) agreed that students had limited SAE opportunities within their communities. These barriers could be why 74.1% of participants agreed that they have worked to create SAE opportunities for their students in the facilities belonging to their SBAE department. Almost half of participants (47.3%) also agreed that they were encouraging students to complete SAE that aligned with the FFA agricultural proficiency award program. Lack of resources like texts, journals, and travel money was indicated as a reality for 44.1% of participants.

Table 2.4*Frequency of SBAE teacher perceptions regarding SAE resource availability.*

Resources statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I have created SAE opportunities for my students using ag department facilities	189	181	66	42	21	499
Students lack resources at home such as garden area, pasture, barn and/or equipment	175	183	58	62	21	499
Opportunities for my students to have SAE projects are limited in my school community	93	160	95	102	50	500
I encourage my students to conduct SAE because of the FFA proficiency award recognition	73	165	118	100	47	503
I lack resources such as texts, professional journals, and travel monies	73	149	117	114	50	503

Participants agreed with several statements related to SBAE teachers' self-efficacy of SAE (see Table 2.5). A large majority (73.6%) agreed that they were confident in their ability to support students through FFA award applications with an SAE component and teach recordkeeping (65.1%), which is a major component of SAEs and a necessary component for

completing SAE-based award applications. Interestingly, even though participants felt they could support students with records and applications, over half (54.9%) agreed that they were not confident in their knowledge of the SAE categories. Almost half (44.2%) of participants agreed that they were never taught how to supervise SAEs. Almost half of participants (45.6%) agreed that they were able to individualize instruction for all content areas.

Table 2.5

Frequency of SBAE teacher perceptions regarding self-efficacy of SAE implementation.

Self-Efficacy Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I am confident in my ability to help students complete SAE-related award applications (Ex. State degree, proficiency award, etc.)	159	209	44	52	36	500
There are new SAE categories, such as research, that I am not familiar with conducting	90	186	100	93	34	503
I was not taught how to supervise SAE projects	106	115	65	128	86	500
I lack the knowledge to individualize instruction for my students in all content areas	34	131	109	156	74	504
I don't know how to teach recordkeeping	15	96	65	173	155	504

When considering support for SAE in their programs, SBAE teachers agreed with several statements (see Table 2.6). Participants agreed that their chapter and program were recognized more through FFA than SAE (67.5%). Over half of participants (54.4%) agreed that they could find support for FFA more easily than support for SAE. Less than half of the participants (40.2%) agreed they felt there was a lack of support for SAE by parents and guardians. Participants were also in agreement that they were not receiving recognition from their administrators (68.4%) or school principal (68.5%) for SAE.

Table 2.6

Frequency of SBAE teacher perceptions regarding support for SAE.

Support Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I get more recognition for my chapter by participating in FFA activities than supervising SAE projects	168	172	107	38	19	504
It is harder to garner support for SAE than FFA in my community	95	179	137	73	20	504
Parents feel SAE is an unrealistic expectation of their child	50	152	172	100	28	502
I receive recognition from my administrator(s) for conducting/supervising SAE	14	55	90	128	216	503
I receive recognition from my school principal for conducting/supervising SAE	9	53	97	135	210	504

Statements related to time indicated that participants saw time as a limiting factor for SAE implementation in their programs (see Table 2.7). Participants agreed that they lacked time to visit students' SAE for supervision (67.2%). Participants also agreed that SAE was often the component sacrificed due to other demands for their time (59.1%). Half of participants (51.9%) also agreed that FFA opportunities take away from time to implement SAE in their programs. Half of participants (52.0%) also agreed that they were responsible for supervising SAEs for too many students and that they lacked time to help each student develop an individualized SAE.

Table 2.7

Frequency of SBAE teacher perceptions regarding time for SAE.

Time Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I lack the time to visit their SAE projects	153	183	60	79	25	500
There are so many competing demands for my time; something has to go and it is often SAE	120	178	99	64	43	504
Increased opportunities in FFA leave me less time for SAE	77	183	141	81	19	501
I have too many students to supervise	98	162	83	100	57	500
I do not have time to help each student develop individualized SAE objectives and project plans	76	185	88	107	46	502

Research Question 2: To what extent do SBAE teachers understand the SAE for All model?

Participants were asked to identify the most appropriate SAE category for five scenarios. The scenarios represented Foundational, Immersion – Analytical Research, Immersion – School-Based Enterprise, Immersion – Ownership, and Immersion – Service Learning. Only 164 participants (32.5%) were able to accurately identify all five scenarios (see Table 2.8).

Table 2.8

Participants’ ability to correctly identify SAE categories based on scenarios (n=505).

Number of Correctly Identified SAE Scenarios	<i>f</i>	%
5 correct (100% accuracy)	164	32.5
4 correct (80% accuracy)	181	35.8
3 correct (60% accuracy)	100	19.8
2 correct (40% accuracy)	38	7.5
1 correct (20% accuracy)	10	2.0
0 correct (0% accuracy)	12	2.4

Almost 500 participants ($n = 498$) responded to the Foundational SAE scenario. Participants were able to correctly identify the appropriate category 73.1% of the time ($f = 364$). This scenario was most often confused as an Immersion - Placement SAE (13.3%, $f = 66$), and an Immersion - Internship SAE (6.2%, $f = 31$). Of these three categories, Placement is the only one that was utilized in the Moore and Flowers (1993) model and may be why a larger portion of SBAE teachers identified a career exploration activity as Placement. The SAE for All model introduces Placement and Internship categories together with the main difference between the

two being an agreed upon training plan between the student and employer in an Internship SAE (The National Council for Agricultural Education, 2018b).

Almost 500 participants ($n = 497$) responded to the Immersion – Analytical Research SAE scenario. Of these participants 85.1% were able to correctly identify the appropriate category ($f = 423$). This scenario was most often misidentified as an Immersion – Experimental Research SAE (6.0%, $f = 30$) and a Foundational SAE (5.4%, $f = 27$). Of the five scenarios presented, Analytical Research was correctly identified more than any other scenario, but the two other research categories were also identified as possible areas for the scenario.

Almost 500 participants ($n = 497$) responded to the Immersion – School-Based Enterprise SAE scenario. The scenario was correctly identified by 409 participants (82.3%). The most commonly misidentified categories were from the Moore and Flowers SAE model (1993), including Immersion – Entrepreneurship (7.2%, $f = 36$) and Immersion – Placement (6.4%, $f = 32$). School-Based Enterprise was introduced in the SAE for All model. According to the SAE for All Teacher’s guide, School-Based Enterprises are “an Entrepreneurship SAE with a twist. The difference is that the operation is based at the school and involves a group of students working cooperatively” (The National Council for Agricultural Education, 2017a, p. 20).

Almost 500 participants ($n = 496$) responded to the Immersion – Ownership SAE scenario. Only 318 participants (64.1%) identified the correct category. It was most often mistaken as an Immersion – Entrepreneurship SAE ($f = 161$, 32.5%). Entrepreneurship was a category in the Moore and Flowers SAE model (1993) while the SAE for All model added Ownership as a category. In the SAE for All model, these two categories are often listed together and the main difference between Ownership and Entrepreneurship SAEs includes having a

business plan in an Entrepreneurship SAE (The National Council for Agricultural Education, 2018a).

Almost 500 participants ($n = 498$) attempted to identify the Immersion – Service Learning scenario. 416 of these participants (83.5%) correctly identified the scenario. The remaining 16.5% of participants were spread across the remaining SAE categories.

Conclusions, Implications, and Recommendations

SBAE teachers continue to acknowledge the value of SAE for students and the importance to their learning, in alignment with Wilson and Moore's (2007) study. Not only did most participants agree that SAE is an agriculturally relevant learning experience for students, but they also agreed that it should be a graded component of an SBAE class. Including SAE as a grade has been found to encourage participation in SAE and recommended through research (Bryant et al., 2022; Marzolino & McKim, 2022). SBAE teachers can continue to require SAE and can support students in making these connections using Foundational SAEs as a graded component of each class. Perhaps state and national SBAE stakeholders could offer concrete examples and best practices for implementing Foundational SAEs and how to best supervise student progress.

Despite it being previously recognized as a barrier, teachers indicated that recordkeeping was not necessarily an issue for them. The Agricultural Experience Tracker (AET) was available to 78% of SBAE programs in 2022 (Hanagriff, n.d.). AET has existed as a recordkeeping system for SBAE programs since 2007 (AET, n.d.), therefore between the longevity of the program and the accessibility to teachers, it may be easing the previously indicated challenge of SAE recordkeeping. Many participants indicated they were taught how to teach recordkeeping, which

is a practice that should be continued in teacher preparation programs. As AET is being used as the primary recordkeeping system for SBAE programs, a specific focus on teaching recordkeeping in AET could be a priority.

Participants indicated they had a hard time finding support for SAE and they felt students did not have access to resources at home. The perceived lack of support could be why such a large portion of participants (74.1%) agreed that they have worked to incorporate SAE facilities on their school campuses. National FFA does offer an opportunity to receive SAE grant funding for students to start or grow their Immersion SAEs. Currently, SAE grants can provide students with grant funding valuing between \$1,000 and \$9,000 (National FFA Organization, n.d.-b). A similar practice could be incorporated at the state level as well to allow more students accessible funds needed for SAEs that require student funding such as Ownership, Entrepreneurship, Research, and Service Learning. Additional funding could also be sought to support more School-Based Enterprise SAEs as well as Placement SAEs that are conducted on school campuses. SAEs conducted on a school's campus could allow the SBAE teacher to grow and utilize more programmatic facilities while reducing the time burden on teachers for supervising SAEs.

Participants are using FFA's agricultural proficiency awards and degrees as motivators and guidelines for encouraging SAE participation. Prior to SAE for All, FFA awards provided some of the only expectations for SAE. Having such high agreement for using proficiency awards as an SAE encouragement could be a holdover from the previous Moore and Flowers (1993) model. The National FFA Proficiency Award application was updated for the 2023-2024 school year to include some Foundational SAE connections to the Immersion award application, which is a start in aligning SAE for All with the previously utilized award applications (National

FFA Organization, 2023). Creating a standalone Foundational SAE award could provide all students the opportunity to reflect on their learning and work towards career exploration. National FFA could also consider removing the specific categories and allowing all SAE-based award applications to be submitted and sorted into categories for judging. Proficiency award applications are currently divided into categories that are related to various Agriculture, Food, and Natural Resources (AFNR) standards that have the potential to change each year. While it is up to the SBAE teacher to decide if a student's idea for a SAE could be completed for class credit, there is currently a disconnect between what a teacher allows for the SAE work-based learning component versus what type of SAE would be eligible for one of the award categories. The disconnect between class and FFA SAE hours means that students completing an SAE for class that aligns with their goals and provides the experiential learning component but does not easily fall into one of the pre-determined proficiency award categories could not be recognized for their work through FFA awards. Removing the barrier of the set proficiency award categories could alleviate the proficiency award categories being used as guidelines for what *counts* as an SAE (The National Council for Agricultural Education, 2015) and limiting student engagement in activities that most align with their career goals.

Participants overwhelmingly indicated that they were not receiving recognition from their principals and administrators for SAE. SAE is an activity that is unique to SBAE programs and administrators may not understand the purpose and importance for SBAE students. Perhaps there is a way to provide more education for these program supporters about the influence and importance of SAE. Introducing administrators to the National Program Quality Standards for Agricultural Education (The National Council for Agricultural Education, 2017b) and highlighting the benefits of SAEs for students through state and national professional

development could help them to better value SAE. SBAE teachers could also intentionally invite their administrators to events that showcase student SAE engagement, such as SAE visits, SAE showcases, proficiency award presentations, FFA banquets, etc.

Participants indicated that the FFA component of their programs was impacting SAE implementation. FFA's impact can be felt through community expectations, additional time needed to advise FFA chapters and activities, and helping students complete FFA award applications. Perhaps state FFA associations and SBAE leaders could consider limiting FFA events to certain times of year or two small windows of time to alleviate travel to events and the associated time needed to prepare for FFA events. National and state stakeholders could also consider including opportunities to highlight SAE at every FFA event. Incorporating SAE at more FFA events could allow state and national stakeholders to utilize their position as opinion leaders to encourage a more consistent level of excitement and expectation for SAE among SBAE teachers and students.

Beyond the additional FFA demands, lack of time for SAE was recognized by participants in this study, much like the barriers identified by Retallick (2010). According to majority of the participants, the increased number of students and additional pressures on an SBAE teacher's expectations limit the time they can focus on SAE supervision and implementation. Perhaps a factor contributing to this sentiment is the previous expectation that SAE must be accomplished *outside* of class time. The SAE for All model has addressed the time issue through the incorporation of Foundational SAEs and allowing SAEs to

happen in the school facilities and occasionally during the school day as long as the program is student managed, outside formal instructional time, simulates a real world work environment, is tied to a career plan and is otherwise not connected to directed

laboratory instruction by the teacher.” (The National Council for Agricultural Education, 2015, p. 4-5).

State and national stakeholders should work to debunk the misconception that SAE can only happen outside of school and encourage the incorporation of SAE into a SBAE teacher’s contract time.

Teachers admitted to not being knowledgeable of the “new” SAEs in the perceptions statements. Lack of knowledge is reinforced by the third of participants identifying three or less scenarios. Perhaps the lack of knowledge is due to the variation in communication channels within the states and lack of advertisement in some states. When recruiting states to participate, several SBAE state leaders indicated only a small portion of teachers were aware of the new model or they had plans to roll SAE for All out in their states later in the summer. National and state stakeholders should continue to work to align award applications to the SAE for All categories and offer training opportunities for SBAE teachers. Creating pre-made lesson plans to disseminate to states to teach SBAE teachers about SAE for All could provide a consistent message being provided to those that are implementing SAE. Teacher educators should include an opportunity for pre-service teachers to explore and understand the SAE for All model. Perhaps having SAE activities or requirements in alignment with SAE for All during students’ clinical internships could allow these future teachers to have concrete experiences interacting with SAE for All.

When identifying categories of scenarios, many participants continued to consider SAEs to be in alignment with the Moore and Flowers (1993) SAE model. For example, participants who misidentified the School-Based Enterprise SAE of students growing vegetables on campus to sell at a local farmers market were categorizing SAEs as Entrepreneurship or Placement.

While School-Based Enterprise SAE is designed to be an entrepreneurship project led by students while being funded and housed on a school's campus, the SAE for All model clearly delineates School-Based Enterprise as its own category. An Entrepreneurship SAE would be funded by the student, while a Placement SAE would be directed by an employer. School-Based Enterprise creates an opportunity for students to utilize the resources on campus instead of having to acquire them on their own, addressing this barrier recognized by Retallick (2010) and reinforced through participants' responses in the Likert-scale questions. School-Based Enterprise holds the potential to make Immersion SAEs more equitable for students in every program by removing some of the barriers related to Entrepreneurship or Placement SAEs like funding or transportation. State and national stakeholders could offer exemplars of School-Based Enterprises as examples as well as implementation materials to begin, maintain, and transfer responsibility between students when those involved graduate from high school. Creating resources such as grants and group FFA awards to recognize all students participating in a School-Based Enterprise SAE could encourage more SBAE teachers to supervise this type of SAE.

Participants were able to identify the Analytical Research scenario, or at least recognized that the scenario was research based. Perhaps participants' ability to recognize an Analytical Research SAE is due to the unique nature of research compared to all other SAE categories. The Ownership scenario was often misidentified as an Entrepreneurship SAE. Prior to SAE for All, Ownership was not a component of the model and is an added category to reach students that own an enterprise that may have income but does not have a full business plan. Due to the small differences between each of these categories, state and national stakeholders could highlight SAEs that showcase the nuances that make the categories unique.

While Service Learning is a category that was added through SAE for All, participants were able to identify this scenario correctly. Perhaps participants' ability to identify Service Learning SAEs is due to the clear nature of serving the community through the SAE described. Like School-Based Enterprise, great potential exists for all students in SBAE classes to gain relevant skills through participation in a Service Learning SAE. Service Learning SAEs could be embedded into classes, engaging students in different components that connect with their interests and abilities. Embedding a Service Learning SAE into classes could allow SBAE teachers to supervise students during their contract time, addressing the expressed perception that there is not enough time to supervise or manage SAEs.

Future research in this area could dig deeper into SBAE teacher perceptions of SAE and understanding of SAE for All. Replicating this study in individual states could provide a clearer picture of the values and concerns of teachers within those states allowing state SBAE leaders and teacher educators to best address the needs within their states. Qualitative interviews or focus groups investigating teachers' experience with leading SAE and implementing SAE for All would be valuable. Acquiring a specific description of teachers' experiences could offer a better understanding of perceptions regarding SAE and their understanding of SAE for All categories. A better understanding of teachers' experiences could support the ongoing diffusion of SAE for All, ultimately positively impacting SBAE students across the country through increased SAE participation.

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Chapter 3: Diffusion of the SAE for All Model Among School-Based Agricultural Education Teachers

Abstract

The SAE for All philosophy was adopted in 2015 after a committee was established by The National Council for Agricultural Education to review and revise Supervised Agricultural Experience to better align with the needs of current SBAE students. This study utilized the Diffusion of Innovations theory to investigate the diffusion of SAE for All. A Qualtrics questionnaire was sent to all SBAE teachers in 32 states, returning 505 usable responses. When considering the perceived attributes of SAE for All, participants indicated a high relative advantage and compatibility with their SBAE programs but identified the model as complex to implement. Participants were also asked to identify communication channels which indicated state-level professional development, SAE for All website and guides, and other teachers as their main sources of information regarding SAE for All. Recommendations for practice and to strengthen the diffusion of SAE for All among SBAE teachers are provided.

Key Words

Supervised Agricultural Experience, Diffusion of SAE for All, SAE for All, Communication Channels

Introduction and Review of Literature

Supervised Agricultural Experience (SAE) is considered the “experiential service and/or work-based learning” piece of the three-component model of agricultural education (SAE for All, n.d.-c). SAE is believed to have developed from Stimson’s (1919) home project for farm boys enrolled in agriculture classes (Croom, 2008). There are over 1,200,000 students enrolled in School-Based Agricultural Education (SBAE) classes today (National FFA Organization, n.d.).

SAE has benefitted students in a variety of ways. Through SAE, students have been able to build meaningful relationships, earn money, compete in FFA events, practice recordkeeping, and gain beneficial skills (The National Council for Agricultural Education, n.d.).

The Smith-Hughes Act, passed in 1917, offered the first federal funding for what is now SBAE and required students to maintain a supervised farming project (Talbert, et al., 2014). Since the Vocational Education Act in 1963, which changed the guidance for federal funding for SBAE, there has been a lack of clear expectations for SAE implementation throughout the country (Talbert, et al., 2014). The need for set SAE expectations has been called on throughout research (Doss & Rayfield, 2019; Dyer & Osborne, 1995; Retallick, 2010; Wilson & Moore, 2007). FFA awards have been one of the few driving forces for guidance of what SAE participation looks like in some programs (Ford & Lambert, 2023b). The FFA awards structure primarily aligns placement and entrepreneurship SAEs with a focus on SAEs in production agriculture (National FFA Organization, n.d.). When SBAE teachers are utilizing the FFA awards as guidelines for what *counts* for SAE in their programs, it has been a limiting factor for students, especially those in more urban areas (Ford & Lambert, 2023a).

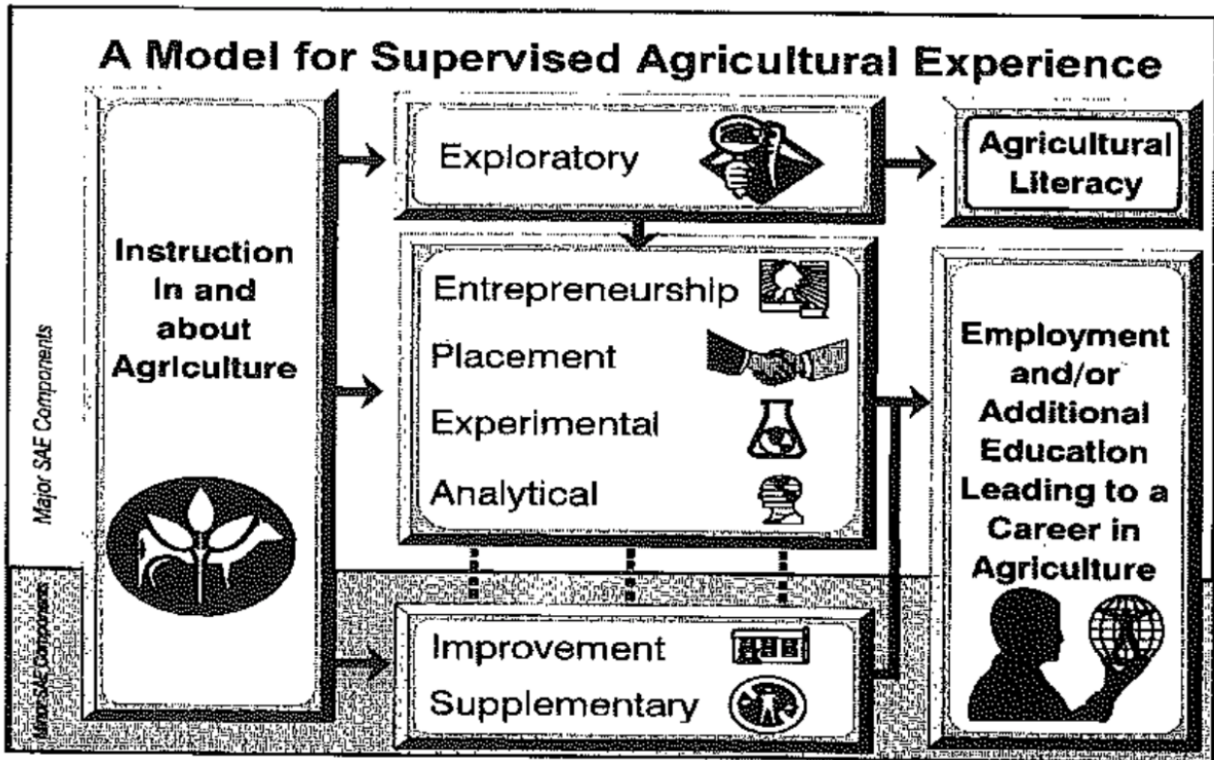
Beyond the lack of clear guidelines for what an SAE should be, other barriers to implementation have been expressed. Students enrolled in SBAE are no longer solely farm boys

with a desire to return to the farm, as was the case in the early days of agricultural education (Talbert et al., 2014). Class sizes have grown and responsibilities of SBAE teachers have changed, requiring current SBAE teachers to divide their time differently than their predecessors (Retallick, 2010). The design of schools concerning schedules (Moore et al., 1997; Retallick, 2010; Wilson et al., 2005) limits an SBAE teacher's time to interact with students and maintain continuity of SAE recordkeeping expectations. Because most students enrolled in agricultural education lack direct experience from production agriculture backgrounds, many teachers feel students lack support outside of the classroom to implement SAE (Retallick, 2010; Wilson & Moore, 2007).

To address these barriers and support the change in student demographics in SBAE programs, The National Council for Agricultural Education (The Council) established a committee that created SAE for All in 2015 (The National Council for Agricultural Education, 2015). SAE for All updated the 1993 Moore and Flowers SAE Model (see Figure 3.1), incorporating a Foundational SAE component for all students which allows students to explore careers, build employability skills, plan for personal financial management, practice workplace safety, and become more agriculturally literate (see Figure 3.2). SAE for All also increased opportunities for students to gain work experience related to agriculture through Immersion SAEs, which are most like the type of SAEs required in the Moore and Flowers (1993) model and previous iterations of SAE.

Figure 3.1

The Moore and Flowers (1993) SAE Model.



Note: Adapted from the July 1993 edition of the Agricultural Education Magazine.

Figure 3.2

Overview of the SAE for All model.



Note. Adapted from “SAE for All Evolving the Essentials Immersion SAE” webpage (SAE for All, n.d.-a).

Following the adoption of the *SAE for All Philosophy and Guiding Principles* (The National Council for Agricultural Education, 2015), implementation guides for SBAE teachers and students were released in 2017 (The National Council for Agricultural Education, 2017a, 2017b). Independent learning guides for Foundational and Immersion SAEs were released in

2018 (SAE for All, n.d.-b). Beginning in 2016, professional development opportunities for SAE for All have been offered at the National Association of Agricultural Educators (NAAE) National Conferences (National Association of Agricultural Educators, 2015, 2016, 2017, 2018, 2019, 2020, 2022, 2023), reaching SBAE teachers and leaders from across the country. The Council offered regional *Train the Trainer* events in spring and summer 2019 to prepare SBAE teachers, state SBAE leaders, and SBAE teacher educators to roll-out SAE for All in their home states (M. Kreifels, Personal Communication, March 2023). States also began offering professional development for their teachers with many states, like North Carolina, rolling out SAE for All in 2019. With schools across the country shutting down in 2020 due to the COVID-19 pandemic (Lindner et al., 2020; Ramage Martin et al., 2023), the full launch of SAE for All was impacted (Ford & Lambert, 2023a, 2023b). A position with the National FFA Organization was created for a SAE Specialist and filled in April 2023 (Rekeweg, 2023a). Following the addition of a national SAE Specialist, Train-the-trainer professional development was once again offered at the national level for state SBAE stakeholders in 2023 and 2024 (Rekeweg, 2023b). States are continuing with their roll-out or re-roll-out of SAE for All.

Following this major change to one of the three components of SBAE, there is little empirical research related to SAE for All. Studies in Texas and North Carolina have seen a slow adoption rate and lack of understanding of SAE for All (Doss & Rayfield, 2019; Ford & Lambert, 2023a, 2023b). There is a need to understand if SAE for All is being utilized in SBAE programs and where teachers are learning about this major component of SBAE.

Theoretical Framework

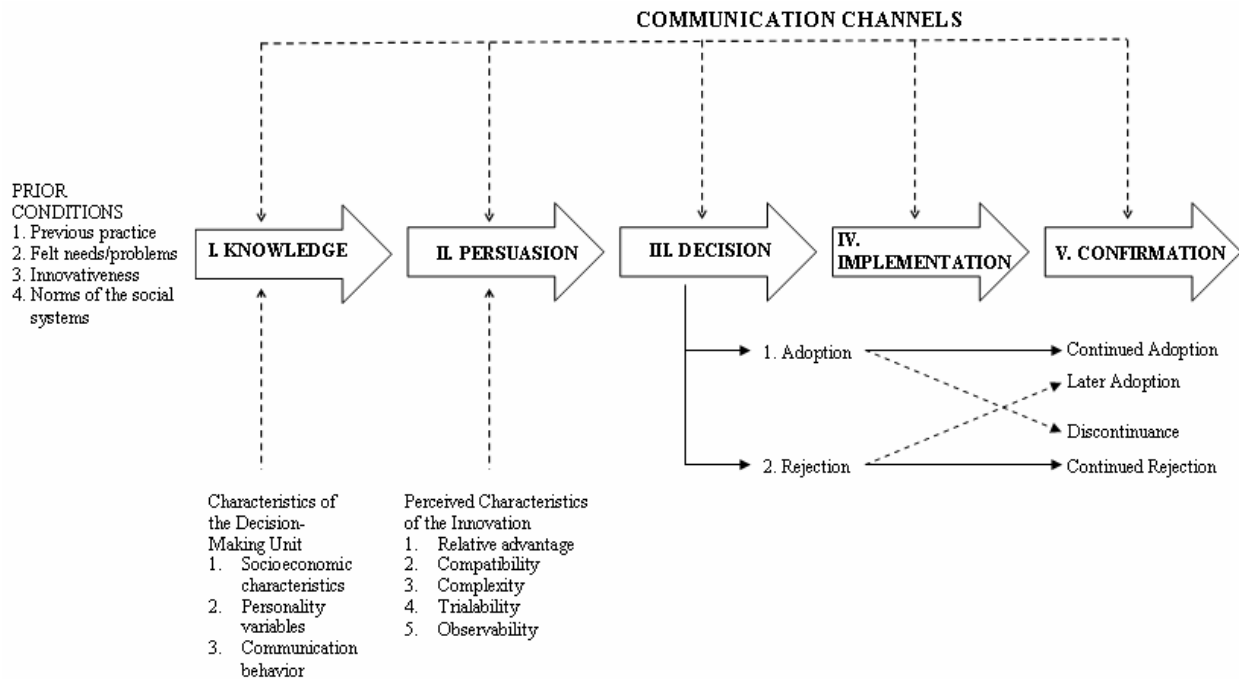
This study is framed using Rogers (2003) Diffusion of Innovation Theory (see Figure 3.3). In this theory, diffusion is considered “the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5). Due to the innovative nature of SAE for All compared to the Moore and Flowers (1993) SAE model, there is a need to investigate the acceptance of the new SAE guidance.

Within the Diffusion of Innovation theory, the Innovation-Decision process involves five stages that a person must move through to adopt an innovation (Rogers, 2003). These stages include (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation (Rogers, 2005). In the persuasion stage there are five perceived characteristics that a person considering adopting an innovation will consider including relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Each of these components must be considered by the teacher when deciding to adopt SAE for All into an SBAE program.

Information regarding an innovation is shared through a communication channel, which “is the means by which messages get from one individual to another” (Rogers, 2003, p. 18). Due to the large number of potential adopters, information regarding SAE for All has traveled through a variety of communication channels at the local, state, and national levels. It is worth investigating which of these communication channels have been the most efficient in reaching potential adopters.

Figure 3.3

Model of the five stages of the innovation-decision process.



Note. Adapted from “Diffusion of Innovations” by Everett M. Rogers (2003, p. 170).

Purpose and Objectives

The purpose of this study is to understand how SAE for All is being adopted by SBAE teachers across the nation. This study investigates whether teachers are choosing to adopt SAE for All, how they perceive SAE for All fits into their programs, and where they are learning about the model. This study is part of a larger study investigating SAE in the United States. The research questions guiding this study include:

1. Are SBAE teachers choosing to adopt SAE for All?
2. What are SBAE teachers’ experiences with the diffusion of SAE for All?
3. Where are SBAE teachers learning about SAE for All?

Methods

This study utilized a cross-sectional quantitative survey design with the questionnaire in Qualtrics administered via email to participants. Survey research was selected for this study because it “provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of the population” (Creswell & Creswell, 2018, p.

12). Participation in this study was incentivized with a drawing for one of four Amazon gift cards (Dillman et al., 2014).

Participants

The population of interest for this study is all SBAE teachers in the United States. According to the 2021 National Supply and Demand Study, there are 13,349 agriculture teachers across the country (Smith et al., 2022). A pilot study was conducted September-November 2023 utilizing a random sample acquired from the National FFA Organization. Over the course of four rounds of administering the survey following approved IRB contacts, the pilot study utilized 350 emails, garnering only 27 completed surveys for a response rate of 7.71%. Due to the low response rate, we decided to change course to collect a convenience sample to increase survey participation. The convenience sample was accessed by requesting state SBAE leaders share the survey within their respective states. After an approved amendment to our IRB application, emails with an invitation to participate were sent to one SBAE leader of 46 states in December 2023. SBAE leaders could not be identified for Hawaii, Massachusetts, Maine, or Vermont. SBAE leaders were identified through the membership roster found on the National Association of Supervisors of Agricultural Education (NASAE) website. Two current NASAE members from

North Carolina and one faculty member from NC State University provided recommendations for which SBAE leader to contact in states with multiple NASAE members.

SBAE leaders of 32 states agreed to distribute the survey to their teachers. According to the 2022 State-Level Supply and Demand Profiles (Smith et al., 2023), the number of SBAE teachers in the participating states totals 11,034. Between December 2023 and January 2024, SBAE leaders were asked to share the survey three times, in alignment with guidance from Dillman et al. (2014). A total of 505 usable responses were received from 28 states (see Table 3.1).

Table 3.1

Participant Demographics (n=505).

Demographics	<i>f</i>	%
Gender		
Male	190	37.6
Female	311	61.6
Non-binary/3 rd gender	2	0.4
Prefer not to say	1	0.2
Did not answer	1	0.2
Community		
Rural	339	67.1
Suburban	108	21.4
Urban	57	11.3
Did not answer	1	0.2
Educational Background		
Traditional agricultural education college preparation program	366	72.5
College preparation in teaching, but not agricultural education	23	4.6

Demographics	<i>f</i>	%
Lateral entry from non-teaching, non-agriculture profession	14	2.8
Lateral Entry from a non-teaching, technical agriculture profession	76	15.0
Other	26	5.1
SAE Lead or Co-Lead in SBAE Program		
Yes	444	87.9
No	60	11.9
Did not answer	1	0.2
Age		
20-29	166	32.9
30-39	125	24.8
40-49	101	20.0
50-59	78	15.5
60-69	27	5.4
Did not answer	8	1.6
Years of SBAE Teaching Experience		
0-5	183	36.2
6-10	99	19.6
11-15	74	14.7
16-20	62	12.3
21-25	34	6.7
26-30	28	5.5
31-35	15	3.0
36+	8	1.6
Did not answer	2	0.4

Instrumentation and Data Analysis

A questionnaire was designed for the study. The survey consisted of multiple sections related to the diffusion of SAE for All. The components related to levels of adoption, perceived characteristics, and communication channels of SAE for All are included in this study. The items related to levels of adoption and perceived characteristics were modified from Sirajuddin's (2019) study to align with SAE for All. The levels of adoption question utilized skip logic if a participant selected *I have no knowledge of SAE for All* to bypass the perceived characteristics items. The perceived characteristics statements were listed across three separate pages and asked participants to indicate their level of agreement with the statements using a 5-point Likert scale where 1 = strongly disagree, 2 = somewhat disagree, 3 = Neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree.

Validity of the survey was established through a panel of experts between August and September 2023. The panel of experts ($n = 5$) consisted of agricultural education university faculty and staff from multiple universities with an extensive knowledge of SAE for All and/or survey design. Suggested changes from the panel of experts were applied to the survey prior to pilot testing ($n = 27$). Cronbach's alpha was calculated for each construct following the pilot study (see Table 3.2) and was considered to be reliable (Creswell & Creswell, 2018; DeVellis & Thorpe, 2022). Data was collected through Qualtrics and analyzed using SPSS statistical software.

Table 3.2*Cronbach's alpha calculated for pilot and post-hoc reliabilities.*

Perceived Characteristics	Item Count	Pilot	Post-hoc
Relative advantage	4	.69	.80
Compatibility	5	.85	.90
Complexity	4	.85	.82
Trialability	5	.79	.74
Observability	6	.85	.86

Findings

Research Question 1: Are SBAE teachers choosing to adopt SAE for All?

Participants were asked to describe their knowledge of SAE for All by selecting a statement that aligns with Rogers' (2003) levels of adoption (see Table 3.3). Of the 505 participants, 46.9% are actively utilizing the SAE for All model in their SBAE programs. Looking only at those with an awareness of SAE for All, the percentage of adopters grows to 52.0%. Almost one tenth of participants indicated that they are unaware of SAE for All, despite the previous roll-out of SAE for All at the time of data collection. The most interesting group are the 14.4% of respondents that are actively rejecting the use of SAE for All. When considering only those that are at least aware of SAE for All, this group comprises a staggering 15.6% of participants.

Table 3.3*SBAE teachers' description of their knowledge of SAE for All (n=505).*

Adoption Levels	<i>f</i>	%
I have no knowledge of SAE for All	49	9.7
I am aware of SAE for All	100	19.8
I am considering using SAE for All in my program	48	9.5
I know about SAE for All, but choose not to use it in my program	71	14.4
I know about SAE for All and use it in my program	169	33.5
I know about SAE for All, use it in my program, and encourage others to use it	68	13.5

Research Question 2: What are SBAE teachers' experiences with the diffusion of SAE for All?

Grand means were calculated for the constructs related to each of the perceived characteristics of SAE for All. Participants acknowledged the relative advantage ($M = 3.59$, $SD = 0.79$) and compatibility ($M = 3.56$, $SD = 0.87$) of SAE for All, while indicating that its complexity ($M = 3.37$, $SD = 0.89$) is its biggest challenge (see Table 3.4).

Table 3.4

Grand means for perceived characteristics of SAE for All constructs.

Perceived Characteristic Categories	Grand Mean	SD	<i>n</i>
Relative Advantage	3.57	0.79	452
Compatibility	3.56	0.87	449
Trialability	3.46	0.77	451
Observability	3.40	0.88	448
Complexity	3.37	0.89	450

Note. Strongly Agree = 5, Somewhat Agree = 4, Neither Agree nor Disagree = 3, Somewhat

Disagree = 2, Strongly Disagree = 1

Three out of four items in the relative advantage construct were agreed on by over half of the participants (see Table 3.5). These items included statements about increased accessibility of SAE to students (64.9%), ease of finding information about SAE for All (60.9%) and enhancing the quality of student SAEs (60.9%). The item related to the ease of implementation of the SAE for All model only met 48.7% agreement by participants.

Table 3.5*SBAE Teacher Perceived Relative Advantage of SAE for All.*

Relative Advantage Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
The SAE for All model increases the accessibility of SAE to my students	100	196	109	40	11	456
I can find information I need about the SAE for All model easily	96	180	100	67	10	453
The SAE for All Model enhances the quality of SAEs my students can do	73	204	115	53	10	455
The quality of information provided about the SAE for All model makes it easy to implement	47	175	138	77	19	456

Four out of five items in the compatibility construct were agreed upon by over half of the participants (see Table 3.6). *SAE for All supports my work as an agriculture teacher* was the most agreed upon item of any construct (69.8%). Even though participants identified that much of SAE for All is compatible with the goals of their SBAE programs, 40.8% agreed that it was a good fit for how they do their jobs.

Table 3.6*SBAE Teacher Perceived Compatibility of SAE for All.*

Compatibility Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
SAE for All supports my work as an agriculture teacher	114	203	93	37	7	454
SAE for All fits my needs in providing SAE opportunities for all students	87	192	118	45	13	455
SAE for All helps me provide SAE opportunities based on the individual needs of my students	68	191	131	51	13	454
My vision for the future of agricultural education includes SAE for All	107	138	125	61	22	453
SAE for All fits well with the way I do my job	54	132	153	91	26	456

The complexity construct had the lowest level of agreement of the five constructs (see Table 3.7). Within this construct, SBAE teachers indicated that they could find (62.2%) and access (59.3%) information about SAE for All, but only a small portion agreed that it is easy to teach (37.4%) and that training was not necessary (42.2%).

Table 3.7*SBAE Teacher Perceived Complexity of SAE for All.*

Complexity Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I can find the information I am looking for about SAE for All	102	181	105	54	13	455
Accessing information about SAE for All is easy for me	93	177	99	75	11	455
I have no difficulty teaching my students about SAE for All	53	117	137	126	21	454
I do not need extensive training on how to implement SAE for All	72	119	98	119	45	453

While four out of five items in the trialability construct were agreed upon by over half of the participants, the final item had the lowest level of agreement of any item (see Table 3.8).

Only 30.3% of participants agreed that SAE for All did not require much time to learn.

Positively, the remaining four items indicated that SBAE teachers saw SAE for All as something they could test, tweak, and use in their programs.

Table 3.8*SBAE Teacher Perceived Trialability of SAE for All.*

Trialability Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I am able to experiment with SAE for All in my program	90	222	86	45	11	454
I have tried SAE for All in my program	149	150	61	48	47	455
SAE for All can be tested without obligation to continue using it	86	151	165	44	10	456
I can easily select any features of SAE for All that I want to use	82	153	130	73	15	453
It does not require much time to explore SAE for All	43	95	130	135	52	455

Two thirds of the items in the observability construct were agreed upon by participants (see Table 3.9). These four items are more theoretical in understanding why SAE for All is important to an SBAE program. The two items that had less than half of participants agreeing were both related to witnessing SAE for All work for someone else. Only 41.9% of participants indicated they had seen students make connections to their futures through SAE for All and 35.9% had seen another SBAE program modeling successful implementation.

Table 3.9*SBAE Teacher Perceived Observability of SAE for All.*

Observability Statements	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	<i>n</i>
I am aware of the benefits of SAE for All for students	94	206	88	50	17	455
I have heard a lot about SAE for All	128	152	80	64	30	454
I am aware of the benefits of SAE for All for agriculture teachers	81	183	115	53	23	455
I have seen how SAE for All could work in my program	99	145	118	65	27	454
I have seen SAE for All help students connect to their futures	59	131	139	87	37	453
I have seen how other agriculture teachers are using SAE for All in their programs	51	112	94	130	67	454

Research Question 3: Where are SBAE teachers learning about SAE for All?

When asked to identify all places that they had learned about SAE for All, participants provided 1545 responses, averaging 3.1 communication channels per participant. State level professional development (18.83%) and the SAE for All website (18.64%) were recognized by

over half of the participants as communication channels for SAE for All (see Table 3.10). The SAE for All guides (13.85%) and other teachers (13.20%) were also highly ranked.

Table 3.10

Where SBAE teachers have learned about SAE for All (n = 504).

Communication Channel	<i>f</i>	%
State Professional Development	291	18.8
SAE for All Website	288	18.6
SAE for All Guides	214	13.9
Other Teachers	204	13.2
Email communication from The Council, National FFA, etc.	158	10.2
NAAE Conference Workshop	86	5.6
Undergraduate Agricultural Education Courses	83	5.4
National FFA Teacher Workshop	71	4.6
I have not learned about SAE for All	47	3.0
Graduate Agricultural Education Courses	38	2.5
Regional NAAE Conference Workshop	35	2.3
Other	30	1.9

Note. Participants selected “all that apply”

Open-ended responses to the *other* category offered insight into several other communication channels for SAE for All. Participants referenced other professional development opportunities like the *Germinate* conference, region-level professional development, SAE Camp, *SAE for All: Train the Teacher*, and an AET workshop. Several grant programs were also referenced as sources of information regarding SAE for All including state-specific career preparation funding, United States Department of Agriculture Cohort Grant Program, and a grant to implement the three-component model into schools. Pre-made resources

were another source of information such as an SAE for All poster received from National FFA and content in Curriculum for Agricultural Science Education (CASE) lessons. Finally, several participants referenced learning from others, such as a student teacher, state SBAE leader, or resources shared by others in SBAE teacher Facebook groups.

Conclusions, Implications, and Recommendations

Most participants were aware of SAE for All. Participants self-identified themselves into each of the five stages of Rogers' (2003) Innovation-Decision process, where less than half were utilizing the SAE for All model in their SBAE programs. The remaining participants were in the early stages of the Innovation-Decision process or had not entered the process at all. It appears that participants are hearing about the change in SAE model, but at various rates.

If SAE for All is the answer to making SAE more accessible for all students, a concerning number of participants (14.4%) were actively rejecting SAE for All. Future research should seek to understand why these teachers are choosing to reject SAE for All. A deeper understanding of what is influencing this decision and what SAE does look like in these SBAE programs could allow state and national stakeholders to increase the adoption of SAE for All. SAE for All sought to alleviate and overcome some of the obstacles associated with traditional SAE implementation. If it is not working, we need to know why and how SAE may be more effectively, systematically, and broadly implemented in SBAE programs.

When considering the characteristics of SAE for All, participants recognized a high level of relative advantage and compatibility with their SBAE programs. Participants identified lower levels of observability and complexity of SAE for All. It appears that participants are seeing the

potential value of the updated model, but may perceive it as too difficult to implement, especially considering the lack of examples of success so far.

Throughout the perceived characteristics of SAE for All, participants echoed the accessibility of information about SAE for All but struggled to understand how to implement it in their programs. Participants perceived SAE for All as potentially beneficial to the entire SBAE program but struggled with the amount of time needed to learn about, adapt, and change how teachers have previously implemented SAE. For total adoption of SAE for All, SBAE teachers will need to shift their mindset concerning SAE (Ford & Lambert, 2023a, 2023b). State and national stakeholders should continue to provide professional development on SAE for All, with a focus on practical ways to implement it in SBAE programs. Perhaps having teachers articulate their programmatic goals for SAE could support the alignment of SAE for All.

State professional development appears to have the largest influence on disseminating information about SAE for All. State SBAE leaders should recognize their influence as change agents in their states and continue keeping SAE for All at the forefront of professional development for their SBAE teachers. State and national SBAE leaders should also consider utilizing current teachers to lead the conversation and professional development related to SAE for All. The choice of presenters can help improve the observability of SAE for All for other SBAE programs, showcasing that SAE can be effectively implemented in programs and positively connect students to future careers.

The SAE for All website and guides housed on The Council's website were also recognized by a large portion of participants as resources where they learned about SAE for All. Since the website and guides are the main sources of information regarding SAE for All, one could assume that other communication channels are directing teachers to these resources.

National stakeholders should consider alternative ways to provide information about SAE for All to current teachers. Perhaps utilizing various formats, such as videos showcasing successful implementation of SAE for All by teachers or students or podcasts discussing the philosophy behind SAE for All and best practices. This could allow teachers a deeper understanding of the model and see how it could be implemented in their programs.

Interestingly, there appears to be a lack of learning about SAE for All in teacher education programs. While 55.8% of participants have 10 or less years of experience teaching SBAE, the communication channels of undergraduate and graduate classes were only identified by participants 121 times. With almost three quarters of all participants coming through a traditional agricultural education preparation program (72.5%), we can surmise that the information taught about SAE for All is not provided in many programs. Teacher educators should seriously consider ways to teach about SAE for All in their classes. Perhaps offering an SAE-focused course, embedding SAE for All in teaching methods courses, or adding requirements of SAE for All implementation during student teaching could positively influence the adoption of SAE for All among these early career SBAE teachers.

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Chapter 4: Implementation of SAE for All in School-Based Agricultural Education

Programs

Abstract

Supervised Agricultural Experiences (SAE) are one of three major components of School-Based Agricultural Education (SBAE), but teachers have recognized many barriers to fully implementing them in their programs. SAE for All was adopted in 2015 and implementation resources were made available in 2017 to address these barriers. This study investigated SAE for All implementation on a national level and was framed by the Diffusion of Innovations Theory. A Qualtrics survey was administered to all SBAE teachers in 32 states through their respective SBAE leaders, collecting 505 usable responses. Participants had students completing Foundational SAEs at the highest rates, with Placement and Entrepreneurship SAEs as the most conducted Immersion SAEs. Research SAEs were implemented in the smallest numbers, while over half of participants had School-Based Enterprise and Service Learning SAEs taking place in their programs. Participants also recognized many resources available to implement SAEs, but the majority were utilizing resources they had available on campus. AET was the most utilized record book by participants. Recommendations for continued adoption and implementation of SAE for All are provided.

Key Words

SAE for All, Supervised Agricultural Experience, SAE Implementation, Diffusion of SAE, Recordkeeping

Introduction and Review of Literature

Along with classroom instruction and leadership development (FFA), work-based and experiential learning through Supervised Agricultural Experience (SAE) is one of three components of School-Based Agricultural Education (SBAE) (Croom, 2008; The National Council for Agricultural Education, n.d.). This work-based learning component is often believed to have begun as Stimson's (1919) home project for boys enrolled in agricultural education classes (Croom, 2008). SAE has been an agriculturally related project completed by students that required time outside of the school day, thorough recordkeeping, and supervision from the SBAE teacher (Stimson, 1919, Talbert et al., 2014). SAE has been known to positively impact students through financial literacy, personal motivation, relationships, and skill development (The National Council for Agricultural Education, n.d.).

SAE expectations and categories have evolved over time to maintain relevance in the changing landscape of agriculture and demographics of SBAE students. Moore and Flowers (1993) proposed a revised model for SAE, which was accepted as the SAE guidelines for over 20 years. During this time, SBAE teachers continued to indicate barriers to implementation and SAE was reportedly not being implemented to its fullest extent (Retallick, 2010; Wilson & Moore, 2007).

Recordkeeping has been a major component of SAEs but varies greatly between states and individual programs (AET, n.d.). In 2007, The Agricultural Experience Tracker (AET) was created, establishing an online record book for SBAE (AET, n.d.). Today, AET has been made available to 78% of all SBAE programs (Hanagriff, 2023). If utilized, this resource can maintain student SAE records and many other programmatic records (AET, n.d.). Unfortunately, many

SBAE teachers perceive AET as complex and choose to not use it even if they have been provided access (Aviles, 2017; Ford & Lambert, 2023b).

An issue that has been acknowledged throughout research pertaining to SAE was the lack of a consistent definition and guidelines for SAE (Doss & Rayfield, 2019; Dyer & Osborne, 1995; Retallick, 2010; Wilson & Moore, 2007). Some of the only nationally recognized SAE guidelines were those connected to FFA Degrees and FFA Agricultural Proficiency Awards. According to the Official FFA Manual (2023), FFA Degrees have SAE requirements for students to complete to be eligible for the awards (see Table 4.1).

Table 4.1

Minimum SAE requirements to earn FFA degrees as written in the 2023 Official FFA Manual.

FFA Degree	SAE Requirements
Discovery (middle school only)	Have knowledge of agriculturally related career, ownership and entrepreneurial opportunities.
Greenhand	Have satisfactory plans for a supervised agricultural experience program.
Chapter	Have in operation an approved supervised agricultural experience program. A student after entering agricultural education must have: Earned and productively invested at least \$150 by the member’s own efforts; or worked at least 45 hours in excess of scheduled class time; or a combination thereof; and Developed plans for continued growth and improvement in a supervised agricultural experience program.
State	While in school, have completed the equivalent of at least two years (360 hours) of systematic school instruction in agricultural education at or above the ninth grade level, which includes a supervised agricultural experience program. A student after entering agricultural education must have: Earned and productively invested at least \$1,000; or

FFA Degree	SAE Requirements
American	<p>Worked at least 300 hours in excess of scheduled class time; or A combination thereof, in a supervised agricultural experience program.</p> <p>Have in operation and have maintained records to substantiate an outstanding supervised agricultural experience program, through which the member has exhibited comprehensive planning and managerial and financial expertise.</p> <p>A student after entering agricultural education must have: Earned at least \$10,000 and productively invested at least \$7,500; or Earned and productively invested \$2,000 and worked 2,250 hours in excess of scheduled class time. Any combination of hours, times a factor of 3.56, plus actual dollars earned and productively invested must be equal to or greater than the number 10,000. Hours used for the purpose of producing earnings reported as productively invested income shall not be duplicated as hours of credit to meet the minimum requirements for the degree.</p>

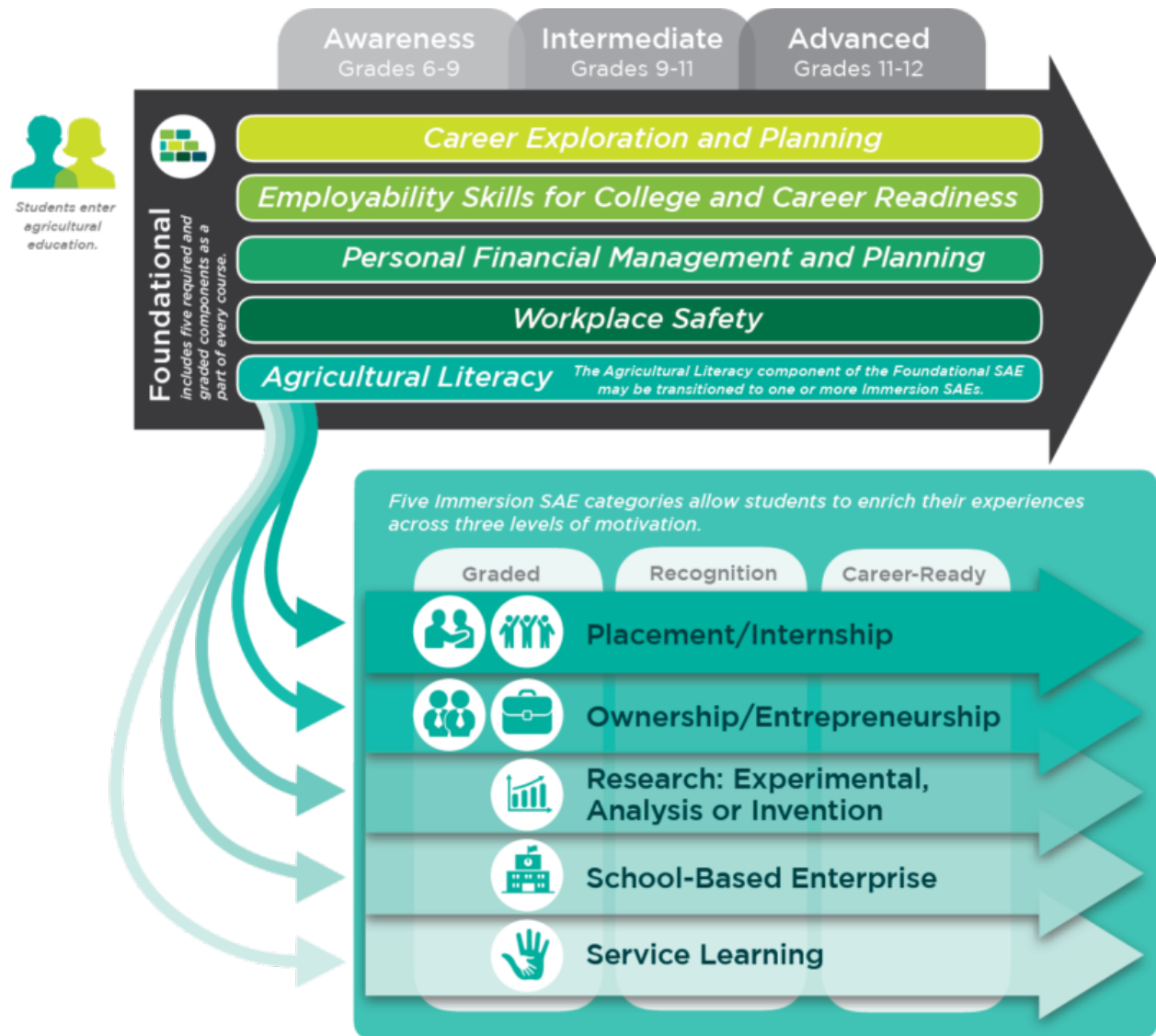
Note. Retrieved from the 2023 FFA Manual (National FFA Organization, 2023a).

While FFA Proficiency Awards are not designed to limit student SAEs (National FFA Organization, 2023b) they only recognize SAEs completed in specific areas of agriculture.

The many barriers to implementation of SAE inspired a need for SAE to be investigated and reinvigorated, leading The National Council for Agricultural Education (The Council) to establish a committee that created SAE for All in 2015 (The National Council for Agricultural Education, 2015). SAE for All created Foundational SAEs, which include five career-preparation components that every student in SBAE could accomplish and benefit from that could lead to an Immersion SAE to deepen the learning experience for students (see Figure 4.1).

Figure 4.1

Overview of the SAE for All model.



Note. Adapted from “SAE for All Evolving the Essentials Immersion SAE” webpage (SAE for All, n.d.).

Not only did the SAE for All model establish the Foundational category, but it also edited and added categories of Immersion SAEs (see Table 4.2). Foundational SAEs are designed to be completed by every student in SBAE and revisited in each SBAE course taken (The National Council for Agricultural Education, 2017a). Immersion SAEs take a student’s learning

experience another step, allowing for more hands-on experiential learning, but does not necessarily have to be completed by every student (The National Council for Agricultural Education, 2017a).

Table 4.2

Description of SAE for All categories from the SAE for All Teacher’s Guide.

Category	Description
Foundational	Conducted by all students in the agricultural education program including students that are on a four-year sequence and those who enroll for a semester. It consists of the following five components: 1) Career Exploration and Planning, 2) Employability Skills for College and Career Readiness, 3) Personal and Financial Management and Planning, 4) Workplace Safety, 5) Agricultural Literacy...The Foundational SAE is ongoing throughout the student’s enrollment in agricultural education and will continue alongside Immersion SAEs implemented by a student.
Immersion – Placement	The student is in an employment setting (either paid or volunteer). The student performs the tasks determined by the employer which are necessary for the operation of the business. Students are evaluated by the employer under the guidance of the agriculture instructor. The placement experience must provide opportunity for the development and advancement of skills and abilities aligned to the AFNR Technical Standards and Career Ready Practices.
Immersion – Internship	An advanced level of the placement. It entails greater involvement of the student, instructor and the employer in determining the activities the student performs in the job setting. The internship experience is directed not as much by the business operation but by a Supervised Agricultural Experience (SAE) Training Plan created for the maximum benefit of developing the student’s knowledge and skills. The plan also contains a list of AFNR Technical Standards and Career Ready Practices which the student will master as a part of their internship experience. Student evaluation is performed by the employer and measures student performance based upon the measures identified in the training plan.
Immersion – Ownership	Operate an individual business which provides goods and/or services to the marketplace. The operational and risk management decisions on how goods and/or services are provided are made by the student owner. Some facilities, input resources and equipment necessary for the SAE operation

Category	Description
Immersion – Entrepreneurship	<p>can be provided from outside individuals without expectations of compensation coming from the student or SAE. The operation must be of sufficient scope to enable development of student skills and abilities aligned to the AFNR Technical Standards and Career Ready Practices</p> <p>A student transitions to an Entrepreneurship SAE at the point the Ownership SAE is enhanced to contain or meet additional criteria. It incorporates all aspects of an Ownership SAE and requires the student to identify and account for, either financially or non-financially, all resources used in the business. The Entrepreneurship SAE includes a Supervised Agricultural Experience (SAE) Business Plan which provides for the continued growth and expansion of the operation.</p>
Immersion – Experimental Research	<p>Involves the application to the scientific method to control certain variables while manipulating others to observe the outcome. The student defines the hypothesis the experiment will test, determines the experimental design, conducts the research, collects the data, draws conclusions from the data and recommends further research that can be done.</p>
Immersion – Analytical Research	<p>Often begins with a question that asks why or how something occurs, followed by a period of data collection using qualitative and/or quantitative methodologies. The student then conducts analysis of data, facts and other information to determine the answer to the posed question.</p>
Immersion – Invention Research	<p>Applies the engineering design process to create a new product or service. This type of research often begins with the identification of a need and the development of a product followed by an iterative process of prototyping and testing that results in a product that meets the identified need.</p>
Immersion – School-Based Enterprise	<p>Student-led business enterprises that provide goods or services. They are operated from the school campus utilizing facilities, equipment and other resources provided by the agricultural education program or the school in general. For a School-Based Enterprise, the student will be working with one or more of their peers on the operation of the enterprise. The business itself may be “owned” by the school or FFA chapter, meaning that the organization holds the risk of the business that is managed by students. Alternatively, the business may be structured as a partnership or cooperative between students. Partnership or cooperative agreements will be used to define how the responsibilities and profits are distributed.</p>

Category	Description
Immersion – Service Learning	<p>Conducted by one or more students in which they plan, conduct and evaluate a project designed to provide a service to the school, public entities or the community. It must provide benefit to an organization, group or individuals other than the FFA chapter.</p> <p>The project must be preapproved by a review committee that includes local stakeholders in addition to the agriculture teacher. It will be of sufficient scope to enable development of student skills and abilities aligned to the AFNR Technical Standards and Career Ready Practices</p>

Tangible implementation guides for both teachers and students (The National Council for Agricultural Education, 2017a, 2017b) were published two years after the adoption of SAE for All. Since 2017, additional resources have been created for SAE for All implementation and are available through the SAE for All website (SAE for All, n.d.). For such a dramatic change in one of the three components of SBAE, there has been little empirical research conducted regarding SAE for All. The few studies focusing on this shift in philosophy have established that understanding and implementation has been slow (Doss & Rayfield, 2019; Ford & Lambert, 2023a). To continue to make SAE for All available to all SBAE students, there is a need to understand how SAE for All is being implemented.

Theoretical Framework

Rogers (2003) Diffusion of Innovations Theory guided this study. The Innovation-Decision process as it applies to the innovation of SAE for All was utilized. In the Innovation-Decision process, Rogers (2003) suggests that there are five stages a person will move through as they decide to adopt or reject an innovation. The five stages include (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation (Rogers, 2003). This study

focuses on the implementation stage of the innovation-decision process. Within this stage, members of the social system are determining whether to adopt or reject the innovation (Rogers, 2003). Investigating this component of diffusion of SAE for All will inform stakeholders of the current use of SAE for All throughout the United States.

Purpose and Objectives

The purpose of this study was to understand how SAE is being implemented in SBAE classrooms. This study investigated which SAE categories SBAE students are completing, the resources SBAE teachers have available for SAE, and what record keeping systems are being utilized for SAE. This study is part of a larger study investigating SAE across the United States.

The research questions guiding this study include:

1. How are SBAE teachers implementing SAE for All in their programs?
2. What resources are available to SBAE teachers for SAE?
3. How are SBAE teachers having students keep SAE records?

Methods

This study utilized a cross-sectional quantitative survey design with the questionnaire in Qualtrics administered via email to participants. Survey research was selected for this study because it “provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of the population” (Creswell & Creswell, 2018, p. 12). To encourage participation in this study, it was incentivized with a drawing for one of four Amazon gift cards (Dillman et al., 2014).

Participants

The population of interest for this study is all SBAE teachers in the United States. According to the 2021 National Supply and Demand Study, there are 13,349 agriculture teachers across the country (Smith et al., 2022). A pilot study was conducted September-November 2023 utilizing a random sample acquired from the National FFA Organization FFA Advisor population. Over the course of four rounds of administering the survey following approved IRB contacts, the pilot study utilized 350 emails, garnering only 27 completed surveys for a response rate of 7.71%. Due to the low response rate, we decided to change course to collect a convenience sample to increase survey participation. The convenience sample was accessed by requesting state SBAE leaders share the survey within their respective states. After an approved amendment to our IRB application, emails with an invitation to participate were sent to one SBAE leader of forty-six states in December 2023. SBAE leaders could not be identified for Hawaii, Massachusetts, Maine, or Vermont. SBAE leaders were identified through the membership roster found on the National Association of Supervisors of Agricultural Education (NASAE) website. Two current NASAE members from North Carolina and one faculty member from NC State University provided recommendations for which SBAE leader to contact in states with multiple NASAE members.

SBAE leaders of 32 states agreed to distribute the survey to their teachers. According to the 2022 State-Level Supply and Demand Profiles (Smith et al., 2023), the number of SBAE teachers in the participating states totals 11,034. Between December 2023 and January 2024, SBAE leaders were asked to share the questionnaire three times, in alignment with guidance from Dillman et al. (2014). More than 500 ($n = 505$) usable responses were received from 28 states (see Table 4.3).

Table 4.3*Participant Demographics (n=505).*

Demographics	<i>f</i>	%
Gender		
Male	190	37.6
Female	311	61.6
Non-binary/3 rd gender	2	0.4
Prefer not to say	1	0.2
Did not answer	1	0.2
Community		
Rural	339	67.1
Suburban	108	21.4
Urban	57	11.3
Did not answer	1	0.2
Educational Background		
Traditional agricultural education college preparation program	366	72.5
College preparation in teaching, but not agricultural education	23	4.6
Lateral entry from non-teaching, non-agriculture profession	14	2.8
Lateral Entry from a non-teaching, technical agriculture profession	76	15.0
Other	26	5.1
SAE Lead or Co-Lead in SBAE Program		
Yes	444	87.9
No	60	11.9
Did not answer	1	0.2
Age		
20-29	166	32.9
30-39	125	24.8

Demographics	<i>f</i>	%
40-49	101	20.0
50-59	78	15.5
60-69	27	5.4
Did not answer	8	1.6
Years of SBAE Teaching Experience		
0-5	183	36.2
6-10	99	19.6
11-15	74	14.7
16-20	62	12.3
21-25	34	6.7
26-30	28	5.5
31-35	15	3.0
36+	8	1.6
Did not answer	2	0.4

Instrumentation and Data Analysis

A questionnaire was designed for the study. The questionnaire consisted of multiple sections related to the diffusion of SAE for All. The components related to SAE for All implementation, resource availability, and recordkeeping are included in this study. The items related to implementation were inspired by Wilson and Moore's (2007) study to align with SAE for All by specifying individual SAE categories. This question asked participants to identify what percentage of their students were completing each of the 11 SAE for All categories including Foundational SAEs and the 10 Immersion SAEs which includes Entrepreneurship, Ownership, Placement, Internship, Experimental Research, Analytical Research, Invention Research, School-Based Enterprise, and Service Learning. Both questions about resources and

recordkeeping allowed participants to select all that applied to their programs and included an open-ended *other* option.

Validity of the survey was established through a panel of experts between August and September 2023. The panel of experts ($n = 5$) consisted of agricultural education university faculty and staff from multiple universities with an extensive knowledge of SAE for All and/or survey design. Suggested changes from the panel of experts were applied to the survey prior to pilot testing ($n = 27$). Data was collected through Qualtrics and analyzed using SPSS statistical software.

Findings

Research Question 1: How are SBAE teachers implementing SAE for All in their programs?

Participants identified Foundational SAEs as one of the only categories that is engaging all students in an SBAE program (11.7%) (see Table 4.4). In the SAE for All model, Foundational SAEs are expected of every SBAE student, and these teachers are implementing the adoption of this new model. Less than one fifth of participants (18.9%) are not engaging students in Foundational SAEs at all, while the remaining 69.5% have some portion of their students engaged in Foundational SAEs.

Table 4.4*Percentage of students engaged in SAEs in SBAE programs.*

SAE for All Category	Percent						<i>n</i>
	0	1-24	25-50	51-75	76-99	100	
Placement	9.3	36.3	26.4	18.1	9.7	0.2	493
Entrepreneurship	14.9	58.9	16.2	6.1	3.9	0.0	489
Foundational	18.9	26.3	15.0	14.0	14.2	11.7	487
Ownership	24.3	52.5	13.6	6.4	3.1	0.2	486
School-Based Enterprise	34.0	44.4	9.8	4.8	3.9	3.1	482
Service Learning	41.3	46.5	7.3	2.9	1.7	0.4	480
Internship	45.9	43.2	6.7	3.2	0.8	0.2	475
Experimental Research	59.0	34.3	3.1	2.3	1.2	0.0	481
Analytical Research	84.2	13.7	1.1	0.6	0.2	0.2	475
Invention Research	88.2	10.0	1.1	0.6	0.0	0.0	468

The two most traditional categories of SAE were implemented at the highest rates, with 90.7% of participants with students involved in Placement SAEs and 85.1% with students involved in Entrepreneurship SAEs. The SAE for All categories that are aligned with Placement and Entrepreneurship SAEs appear to be utilized less frequently. Some participants (75.7%) indicated that some of their students had Ownership SAEs, which can grow into an Entrepreneurship SAE following the establishment of a business plan. Internship SAEs were being conducted by students of 54.1% of participants. While Internship SAEs are similar to Placement SAEs in that a student is working for someone else, the learning goals of an Internship SAE are determined by the student and agreed upon with the employer or supervisor.

Research SAEs were the least utilized Immersion SAE category. Of the three categories of research, Experimental Research is utilized the most (41.0%), compared to Analytical Research (15.8%) and Invention Research (11.8%). Of the two newest stand-alone Immersion categories, both School-Based Enterprise and Service Learning appear to be adopted by more students than the research categories. Some participants (66.0%) indicated that they had students completing School-Based Enterprise SAEs, including 3.1% who had every student in their program engaged in this type of SAE. School-Based Enterprise was the only Immersion SAE category to have multiple programs indicate 100% student engagement. Over half of participants (58.7%) indicated that their students were completing Service Learning SAEs. The design of these categories lends itself to engage large numbers of students in a single SAE, potentially influencing the adoption of School-Based Enterprise and Service Learning on a larger scale.

Research Question 2: What resources are available to SBAE teachers for SAE?

When asked to identify all sources of support and resources for SAE implementation, participants identified 1,800 resources total, averaging 3.7 resources per participant (see Table 4.5). Over half of all participants indicated that they had SAE resources in their school facilities ($f = 369$) and time allotted during their contract time ($f = 280$). Community ($f = 238$) and parental ($f = 207$) support were also included often as support and resources available for SAE.

Table 4.5*Resources available to support SBAE teachers with integrating SAE (n = 492).*

Support and Resources	<i>f</i>	%
School Facilities	369	20.5
Teacher Contract Time	280	15.6
Community Support – Job Placements, Mentorship	238	13.2
Parental support – Financial, Placement, Time	207	11.5
School Vehicle to use	203	11.3
State Requirements	163	9.1
Mileage Reimbursement	128	7.1
School Requirements align with SAE projects	121	6.7
Project funding from school or county	74	4.1
Other	17	0.9

Additional resources identified through the open-ended *other* option referenced funding from inconsistent sources such as grants or stipends. Some participants acknowledged support staff for SAE such as a state staff member leading the efforts within the state or a teaching partner with a class period dedicated to SAE. Other participants shared that students could get credit for SAE through SBAE class honors projects or receive an elective credit for meeting SAE requirements.

Research Question 3: How are SBAE teachers having students keep SAE records?

When asked about all recordkeeping systems utilized this school year, participants provided 643 responses, averaging 1.3 systems per participant (see Table 4.6). Overwhelmingly, participants indicated their use of the Agricultural Experience Tracker (AET) as the recordkeeping system they were requiring students to use ($f = 412$). Over ten percent of all

participants were also utilizing self-created record books in both paper ($f = 72$) and digital ($f = 65$) formats. Even though it is the industry standard for recordkeeping, Quickbooks was the least utilized recordkeeping system ($f = 4$) among the participants.

Table 4.6

Recordkeeping systems being used by SBAE students for SAE (n = 504).

Recordkeeping Systems	<i>f</i>	%
Agricultural Experience Tracker (AET)	412	64.1
Self-Created Paper Record Book	72	11.2
Self-Created Digital Record Book	65	10.1
Excel	34	5.3
None	23	3.6
State-Mandated Paper Record Book	11	1.7
State-Mandated Digital Record Book	11	1.7
Other	11	1.7
Quickbooks	4	0.6

Open-ended responses for the *other* category referenced using the Google Suite for record keeping, including Google Docs, Google Sheets, and Google Classroom. Other digital record keeping systems included Career and College Promise (CCP) and Career and Technical Education (CTE) 360. Several teachers also identified using paper record keeping through a paper calendar, blank notebook, or specifically for Occupational Course of Study (OCS) and Exceptional Children (EC) students.

Conclusions, Implications, and Recommendations

This study found that all categories of SAEs were being conducted by students in participating SBAE programs. In alignment with the SAE for All model, Foundational SAEs were being conducted in the largest numbers. The frequency of Immersion SAEs being conducted varied greatly between categories. Participants recognized multiple sources of support for SAE implementation with a large portion utilizing their school facilities as resources for SAEs. AET was also the main SAE recordkeeping system participants were requiring their students to use.

The Foundational SAE is designed to be conducted by every SBAE student throughout their time in a SBAE program. Foundational SAEs are being adopted by these teachers as an acceptable SAE in their programs. Interestingly, only about a quarter of participants indicated over 75% of their students were conducting Foundational SAEs. Perhaps the lack of 100% student completion of Foundational SAEs is due to a misconception that Foundational SAEs only need to be conducted once before beginning an Immersion SAE. This phenomenon is worth further investigation in future research to better understand how Foundational SAEs are being utilized in SBAE programs.

Of the Immersion SAEs, the traditional categories, Placement and Entrepreneurship, were being conducted by students in the most SBAE programs. Perhaps the higher percentage of Placement and Entrepreneurship SAEs is due to the clearest alignment with FFA awards. Most FFA Proficiency Awards are for Placement, Entrepreneurship, and Research SAEs (National FFA Organization, n.d.), excluding the other categories. Several FFA Degrees require SAEs that earn and invest money (FFA Manual, 2023), which is a challenge where other categories, such as Service Learning, do not involve a student earning money. Even though there may not be

personal income through participation in some SAE categories, there is still an opportunity for students to gain valuable skills for their futures. National FFA should reconsider the SAE requirements for FFA Degrees and Proficiency Award applications to better align with all SAE categories. Perhaps National FFA could consider removing requirements of personal income and investment through SAE for FFA awards and adding a focus on student skill development and career preparation instead.

Even though Research SAEs can be recognized through FFA Proficiency Awards, they are being conducted by the least students in these SBAE programs. Perhaps the lack of participation in Research SAEs is due to the multi-faceted nature of research, where SBAE teachers need to support students through the scientific method, research design, implementation, research report writing, and presentation of findings. Research SAEs hold a great potential to bring the three components of SBAE together (Thiel & Marx, 2021). Research could be taught and conducted in class, students can gain useful skills for their futures, and receive recognition through the FFA Agriscience Fair competition. Embedding Research SAEs into classes could also address the previously indicated barrier of lack of SBAE teacher time (Retallick, 2010; Shoulders & Toland, 2017; Wilson & Moore, 2007) for SAE by limiting the amount of time necessary outside of the contract day to supervise SAEs since majority of the work could be accomplished during class time.

These teachers were also adopting Service Learning and School-Based Enterprise SAEs in their programs. Perhaps teachers are drawn to having students complete these SAEs because of the flexibility of the categories, ability to align the SAEs with course content and being able to support many students through SAEs at one time. Service Learning and School-Based Enterprise SAEs both could be completed on campus and involve every student in a class, which would

allow SBAE teachers to supervise during their contract time. The current School-Based Enterprise implementation guide (The National Council for Agricultural Education, 2018) only directs students through the initial start-up phase of a School-Based Enterprise with no guidance for long-term success of the enterprise. It is worth exploring how to continue a student-led School-Based Enterprise as students graduate and leave the SBAE program. The Council could create a clearer guide to support this transition so that it does not involve the SBAE teacher taking the lead on the SAE. National FFA should consider how to recognize SBAE programs and groups of students who are conducting outstanding Service Learning and School-Based Enterprise SAEs. As it stands, SBAE programs are only allowed to have one student apply for a FFA Proficiency Award in each category (National FFA Organization, 2023b), limiting recognition opportunities beyond the chapter level for all other students that may be involved in a School-Based Enterprise or Service Learning SAE. We also recommend conducting case studies investigating the implementation of the SAE for All categories with a specific focus on categories embedded in SBAE classes.

Unlike previously indicated barriers (Retallick, 2010; Wilson & Moore, 2007), participants shared an impressive amount of resource availability for SAEs in their programs. The highest indicated resource availability included on-campus facilities. As students have less direct production agriculture connections, this may be the direction most programs are moving toward. As resources for SAE continue to be built on campuses, it is important for SBAE teachers to remember the Agricultural Education mission: “Agricultural education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems.” (The National Council for Agricultural Education, n.d.).

Future research could seek to identify which resources are critical to integration of SAE into SBAE programs. Additional research could also investigate the possibility of a relationship between SAE resource availability and integration of SAE in an SBAE program. Understanding the experience of SBAE teachers, students, and parental and community resources could also provide concrete examples and recommendations to others looking to strengthen SAE.

Recordkeeping has been an important component of SAEs since Stimson's (1919) home project. Participants overwhelmingly indicated that they were having students use AET for recordkeeping. In smaller numbers, participants were also creating their own recordkeeping forms for students. The open-ended *other* responses clarified that some participants were creating their own specifically for their Occupational Course of Study (OCS) and Exceptional Children (EC) students. AET has been considered complicated (Aviles, 2017), which could be driving the decision for teachers to create a different record book for some of their students. It is recommended that AET allow SBAE teachers to hide components of AET on student accounts to simplify entering records to better serve all students.

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Chapter 5: Epilogue

This dissertation investigated the diffusion of SAE for All, the current SAE model recommended for use in SBAE programs by national SBAE stakeholders.

Summary of Findings by Study

Article 1:

Research Question 1: What are SBAE teachers' perceptions about SAE?

- Responses from participants indicated that SBAE teachers see value in SAE but there are barriers to implementation.
- In the beliefs category, participants agreed that SAE:
 - Provides real life experiences to their students
 - Should be graded
 - Improves students' mastery of course concepts
 - Gets students started in an agricultural career
- A commonly indicated barrier to SAE implementation is recordkeeping, but less than half of respondents agreed that recordkeeping for SAE was too complicated.
- In the SAE resources category, participants agreed:
 - Students did not have access to resources to implement SAE at their homes and had limited SAE opportunities within their communities
 - They have worked to create SAE opportunities for their students in the facilities belonging to their SBAE department
 - They were encouraging students to complete SAE that aligned with the FFA agricultural proficiency award program

- Lack of resources like texts, journals, and travel money was indicated as a reality
- In the SBAE teachers' self-efficacy of SAE category, participants agreed they were confident in their ability to:
 - Support students through FFA award applications with an SAE component
 - Teach recordkeeping
- In the SBAE teachers' self-efficacy of SAE category, participants agreed they were not confident in their knowledge of the SAE categories and they were never taught how to supervise SAEs.

Research Question 2: To what extent do SBAE teachers understand the SAE for All model?

- Only 164 participants (32.5%) were able to accurately identify all five SAE scenarios.
- Participants were able to correctly identify the appropriate category 73.1% of the time ($f = 364$).
 - This scenario was most often confused as an Immersion - Placement SAE (13.3%, $f = 66$), and an Immersion - Internship SAE (6.2%, $f = 31$).
- A total of 85.1% of participants were able to correctly identify the appropriate Immersion – Analytical category ($f = 423$).
 - This scenario was most often misidentified as an Immersion – Experimental Research SAE (6.0%, $f = 30$) and a Foundational SAE (5.4%, $f = 27$).
 - Of the five scenarios presented, Analytical Research was correctly identified more than any other scenario.
- The Immersion – School-Based Enterprise SAE scenario was correctly identified by 409 participants (82.3%).

- Two categories were the most commonly selected SAEs including Immersion – Entrepreneurship (7.2%, $f = 36$) and Immersion – Placement (6.4%, $f = 32$).
- Only 318 participants (64.1%) identified the correct Immersion – Ownership SAE scenario category.
 - It was most often mistaken as an Immersion – Entrepreneurship SAE ($f = 161$, 32.5%).
- The Immersion – Service Learning scenario was correctly identified by 416 participants (83.5%).
 - The remaining 16.5% of participants were spread across the remaining SAE categories.

Article 2:

Research Question 1: Are SBAE teachers choosing to adopt SAE for All?

- Participants were asked to describe their knowledge of SAE for All by selecting a statement that aligns with Rogers' (2003) levels of adoption.
 - Only 46.9% are actively utilizing the SAE for All model in their SBAE programs. For those with an awareness of SAE for All, the percentage of adopters grows to 52.0%.
 - Almost one tenth of participants indicated that they are unaware of SAE for All, despite the almost 10 years of existence at the time of data collection.
 - A total of 14.4% of respondents are actively rejecting the use of SAE for All. When considering only those that are at least aware of SAE for All, this group comprises a staggering 15.6% of participants.

Research Question 2: What are SBAE teachers' experiences with the diffusion of SAE for All?

- Grand means were calculated for the constructs related to each of the perceived characteristics of SAE for All. Participants acknowledged the relative advantage (M = 3.59, SD = 0.79) and compatibility (M = 3.56, SD = 0.87) of SAE for All, while indicating that its complexity (M = 3.37, SD = 0.89) is its biggest challenge.
- Relative Advantage construct agreement:
 - Increased accessibility of SAE to students
 - Ease of finding information about SAE for All
 - Enhancing the quality of student SAEs
- Relative Advantage construct disagreement:
 - Easy to implement using provided information
- Compatibility construct agreement:
 - *SAE for All supports my work as an agriculture teacher*
- Compatibility construct disagreement:
 - SAE for All was a good fit for how participants do their jobs
- The complexity construct had the lowest level of agreement of the five constructs.
- Complexity construct agreement:
 - SBAE teachers indicated that they could find and access information about SAE for All
- Complexity construct disagreement:
 - SAE for All is easy to teach
 - Training for SAE for All was not necessary
- Trialability construct agreement:
 - SAE for All didn't require much time to learn

- SBAE teachers saw SAE for All as something they could test, tweak, and use in their programs.
- Observability construct agreement connected to the theoretical understanding why SAE for All is important to an SBAE program.
- Observability construct disagreement included: two items related to witnessing SAE for All work for students and other SBAE teachers.

Research Question 3: Where are SBAE teachers learning about SAE for All?

- When asked to identify all places that they had learned about SAE for All, participants provided 1545 responses, averaging 3.1 communication channels per participant.
- Top resources included:
 - State level professional development
 - SAE for All website
 - SAE for All guides
 - Other teachers
- Open-ended responses to the *other* category identified:
 - Other professional development opportunities like Germinate Conference, Region-level professional development, SAE Camp, SAE for All: Train the Teacher, and an AET workshop.
 - Grant programs were also referenced as sources of information regarding SAE for All including state-specific career preparation funding, United States Department of Agriculture Cohort Grant Program, and a grant to implement the three-component model into schools.

- Pre-made resources were another source of information such as an SAE for All poster received from National FFA and content in Curriculum for Agricultural Science Education (CASE) lessons.
- Learning from others, such as a student teacher, state SBAE leader, or resources shared by others in SBAE teacher Facebook groups.

Article 3:

Research Question 1: How are SBAE teachers implementing SAE for All in their programs?

- Participants identified Foundational SAEs as one of the only categories that is engaging all students in an SBAE program. Less than one fifth of participants (18.9%) are not engaging students in Foundational SAEs at all, while the remaining 69.5% have some portion of their students engaged in Foundational SAEs.
- The two most traditional categories of SAE, Placement and Entrepreneurship were implemented at the highest rates.
- The SAE for All categories that are aligned with Placement/Internship and Entrepreneurship/Ownership SAEs do not appear to be utilized as much.
- Research SAEs were the least utilized immersion SAE category type. Of the three categories of research, Experimental Research is utilized the most.
- Of the two newest stand-alone immersion categories, both School-Based Enterprise and Service Learning appear to be adopted by more students compared to the research categories. Over half of participants indicated that they had students completing School-Based Enterprise and Service Learning SAEs.

Research Question 2: What resources are available to SBAE teachers for SAE?

- Participants identified 1,800 resources total, averaging 3.7 resources per participant.

- Over half of all participants indicated that they had:
 - SAE resources in their school facilities ($f = 369$)
 - Time allotted during their contract time ($f = 280$)
 - Community support ($f = 238$)
 - Parental support ($f = 207$)
- Additional resources identified through the open-ended *other* option referenced:
 - Funding from inconsistent sources such as grants or stipends
 - Support staff for SAE such as a state staff member leading the efforts within the state
 - A teaching partner with a class period dedicated to SAE
 - That students could get credit for SAE through SBAE class honors projects or receive an elective credit for meeting SAE requirements

Research Question 3: How are SBAE teachers having students keep SAE records?

- When asked about all recordkeeping systems utilized this school year, participants provided 643 responses, averaging 1.3 systems per participant.
- Agricultural Experience Tracker (AET) was the main recordkeeping system they were requiring students to use ($f = 412$).
- Over ten percent of all participants were also utilizing self-created record books in both paper ($f = 72$) and digital ($f = 65$) formats.
- Open-ended responses for the *other* category included:
 - Google Suite for record keeping, including Google Docs, Google Sheets, and Google Classroom

- Other digital record keeping systems included Career and College Promise and Career and Technical Education (CTE) 360
- Paper-based record keeping through a paper calendar, blank notebook, or specifically for Occupational Course of Study and Exceptional Children students.

Recommendations for Future Research

- Investigate student perceptions of SAE for All and goals for completion of SAEs aligning with SAE for All.
- Investigation of how SBAE teachers are implementing Foundational SAE activities.
- Conduct case studies for implementation for each of the SAE for All categories with a specific focus on categories embedded in SBAE classes.
- Identify recordkeeping needs for SAE for All and how AET is being used to meet these needs.
- Understand SBAE teachers' decision to reject SAE for All.
- Understand how teachers are facilitating relationships and connections for SAEs in their communities.
- Understand implementation of SAE on school campuses and identify resources being utilized.

Recommendations for Practice

Recommendations for State and National SBAE Leaders

- Consider ways to simplify SAE for All.

- Align current FFA awards to incorporate SAE for All, especially considering financial requirements of FFA degrees.
- Establish new awards to recognize all students engaged in Service Learning and School-Based Enterprise SAEs.
- Highlight SBAE programs implementing SAE for All well and provide examples of student success.
- Use current SBAE teacher to present to peers about SAE for All with real examples and resources.
- Create editable choice boards or activities for in-class implementation of Foundational SAEs.
- Offer recommendations for recordkeeping, especially focused on the Foundational SAE component.
- Work with AET to ensure consistent language between the recordkeeping system and SAE for All guides.
- Establish state mandates or initiatives requiring SAE implementation in all programs.
- Create individual state recognition options for SAE for All implementation.

Recommendations for SBAE Teacher Educators

- Incorporate SAE for All training into undergraduate and graduate courses.
- Have students read SAE for All guides and create an implementation plan.
- Utilize guest speakers that are using SAE for All.
- Require use of SAE for All during student teaching.

- Lead workshops at regional, state, and national professional development related to SAE for All. Potentially focus on Foundational, Service Learning, School-Based Enterprise, and Research.
- Introduce recordkeeping for SAE for All in AET.

Recommendations for SBAE Teachers

- Begin incorporating SAE for All into classes by requiring Foundational SAEs.
Remember Foundational SAEs should be revisited in every SBAE course.
- Consider using a Foundational SAE choice board to provide more structure for students.
- Grade all Foundational SAEs. Consider including an Immersion SAE requirement or expectation.
- Consider how to have students maintain records throughout their time in SBAE.
- In multi-teacher departments, discuss SAE for All and create a plan for programmatic implementation.
- Consider embedding Service Learning, School-Based Enterprise, and Research SAEs into classes for all students.

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APPENDICES

Appendix A: Questionnaire

NC STATE UNIVERSITY

Consent

You are being asked to complete a survey for research purposes. The survey is about agriculture teacher perceptions and implementation of Supervised Agricultural Experience. You can expect that the survey will take roughly 10-20 minutes.

You must be 18 years of age or older, reside in the United States, and currently teach school-based agricultural education at the middle or high school level to participate in this study.

- I teach middle and/or high school students
 - I only teach elementary school students
-

For this study, you will complete one online survey about your experiences with Supervised Agricultural Experience (SAE) and SAE for All. Completing this survey is voluntary and you can stop at any time by informing the researcher.

We suggest that you take this survey using a private device, in a private location, using a web browser set to private/incognito mode. The data collected about you from this survey will be stored in accordance with NC State data protection standards.

You will receive a chance to be selected for a \$25 Amazon gift card for completing this survey. In order to receive full compensation for completing the survey, you must opt-in to the drawing for the Amazon gift card at the end of the survey by sharing your name and mailing address.

If you have any questions about the survey, how it is implemented, or the research study, please contact the student researcher, Jillian Ford, at jrcasey2@ncsu.edu and (919) 513-2349. You can also contact the faculty advisor for this research, Dr. Misty Lambert, at mdlamber@ncsu.edu and (919) 515-2707. Please reference study number 26214 when contacting anyone about this project.

If you have questions about your rights as a participant or are concerned with your treatment throughout the research process, please contact the NC State University IRB Director at IRB-Director@ncsu.edu, 919-515-8754, or fill out a confidential form online at <https://research.ncsu.edu/administration/compliance/research-compliance/irb/irb-forms-and-templates/participant-concern-and-complaint-form/>

If you consent to complete this survey, please click “I consent to participate” to continue with the survey.

- I consent to participate
- I DO NOT consent to participate

How would you describe your knowledge of SAE for All?

- I have no knowledge of SAE for All
 - I am aware of SAE for All
 - I am considering using SAE for All in my program
 - I know about SAE for All, but choose not to use it in my program
 - I know about SAE for All and use it in my program
 - I know about SAE for All, use it in my program, and encourage others to use it
-

Indicate your level of agreement to the following statements about SAE for All:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The SAE for All model enhances the quality of SAEs my students can do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAE for All supports my work as an agriculture teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAE for All fits my needs in providing SAE opportunities for all students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accessing information about SAE for All is easy for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can find the information I am looking for about SAE for All	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have tried SAE for All in my program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have heard a lot about SAE for All	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have seen how SAE for All could work in my program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your level of agreement to the following statements about SAE for All:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The SAE for All model increases the accessibility of SAE to my students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can find information I need about the SAE for All model easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My vision for the future of agricultural education includes SAE for All	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not need extensive training on how to implement SAE for All	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to experiment with SAE for All in my program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can easily select any features of SAE for All that I want to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have seen how other agriculture teachers are using SAE for All in their programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have seen SAE for All help students connect to their futures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your level of agreement to the following statements about SAE for All:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The quality of information provided about the SAE for All model makes it easy to implement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAE for All helps me provide SAE opportunities based on the individual needs of my students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAE for All fits well with the way I do my job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have no difficulty teaching my students about SAE for All	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It doesn't require much time to explore SAE for All	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAE for All can be tested without obligation to continue using it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am aware of the benefits of SAE for All for agriculture teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am aware of the benefits of SAE for All for students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Identify your level of agreement with the following statements about SAE:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I believe SAE gets students started in an agricultural career	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe SAE should be part of a student's grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my ability to help students complete SAE-related award applications. (Ex: state degree, proficiency award, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have too many students to supervise SAE projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lack the time to visit their SAE projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was not taught how to supervise SAE projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunities for my students to have SAE projects are limited in my school community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students lack resources at home such as a garden area, pasture, barn and/ or equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have created SAE opportunities for my students using ag department facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Identify your level of agreement with the following statements about SAE:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I believe SAE improves student mastery of course objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have time to help each student develop individualized SAE objectives and project plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I encourage my students to conduct SAE because of the FFA proficiency award recognition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lack resources such as texts, professional journals, and travel monies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I receive recognition from my administrator(s) for conducting/supervising SAE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased opportunities in FFA leave me less time for SAE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents feel SAE is an unrealistic expectation of their child	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are new SAE categories, such as research, that I am not familiar with conducting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Identify your level of agreement with the following statements about SAE:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I believe SAE provides real life experiences for the student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't know how to teach recordkeeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I get more recognition for my chapter by participating in FFA activities than supervising SAE projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lack the knowledge to individualize instruction for my students in all content areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I receive recognition from my school principal for conducting/supervising SAE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is harder to garner support for SAE than FFA in my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SAE recordkeeping is too complicated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are so many competing demands for my time; something has to go and it is often SAE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What percentage of your students participate in the following types of SAE programs?

	None	1-24%	Between 25-50%	Between 51-75%	76-99%	100%
Foundational	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entrepreneurship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ownership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Placement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experimental Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Analytical Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Invention Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
School-Based Enterprise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service Learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What recordkeeping system(s) are your students using for SAE records this school year? (Select all that apply)

- The Agricultural Experience Tracker (The AET)
- Excel
- Quickbooks
- State-Mandated Paper Record Book
- Self-Created Paper Record book
- State-Mandated Digital Record Book
- Self-Created Digital Record Book
- Other
- None

What types of support are available to implement SAE in your program? (Select all that apply)

- School Vehicle to use
 - Mileage Reimbursement
 - School Facilities
 - Project funding from school or county
 - Teacher Contract Time
 - School Requirements align with SAE projects
 - State Requirements
 - Parental support - Financial, Placement, Time
 - Community Support - Job Placements, Mentorship
 - Other
-

Which SAE category is the most appropriate for the following SAE Activity?

Scenario: After completing a career interest inventory, a student interviews a worker at the local grain elevator to determine their interest in a possible career in the agriculture field.

- Foundational
 - Immersion - Entrepreneurship
 - Immersion - Ownership
 - Immersion - Placement
 - Immersion - Internship
 - Immersion - Experimental Research
 - Immersion - Analytical Research
 - Immersion - Invention Research
 - Immersion - School-Based Enterprise
 - Immersion - Service Learning
-

Which SAE category is the most appropriate for the following SAE Activity?

Scenario: A student surveys FFA members and nonmembers on locally grown foods to compare knowledge levels of local agricultural products then compiles the data to present to the local Farm Bureau.

- Foundational
 - Immersion - Entrepreneurship
 - Immersion - Ownership
 - Immersion - Placement
 - Immersion - Internship
 - Immersion - Experimental Research
 - Immersion - Analytical Research
 - Immersion - Invention Research
 - Immersion - School-Based Enterprise
 - Immersion - Service Learning
-

Which SAE category is the most appropriate for the following SAE Activity?

Scenario: A student grows vegetables in raised beds at school to sell at the local farmer's market with two classmates. The project is financed by the school but pays the students a portion of the profit from the sales.

- Foundational
 - Immersion - Entrepreneurship
 - Immersion - Ownership
 - Immersion - Placement
 - Immersion - Internship
 - Immersion - Experimental Research
 - Immersion - Analytical Research
 - Immersion - Invention Research
 - Immersion - School-Based Enterprise
 - Immersion - Service Learning
-

Which SAE category is the most appropriate for the following SAE Activity?

Scenario: A student purchases a steer that will be raised at his/her parent's facilities. The steer will be exhibited throughout the year and sold at market.

- Foundational
 - Immersion - Entrepreneurship
 - Immersion - Ownership
 - Immersion - Placement
 - Immersion - Internship
 - Immersion - Experimental Research
 - Immersion - Analytical Research
 - Immersion - Invention Research
 - Immersion - School-Based Enterprise
 - Immersion - Service Learning
-

Which SAE category is the most appropriate for the following SAE Activity?

Scenario: A group of students learn about a high level of food insecurity in their community and work with the local extension office to establish, market, and maintain a community garden.

- Foundational
- Immersion - Entrepreneurship
- Immersion - Ownership
- Immersion - Placement
- Immersion - Internship
- Immersion - Experimental Research
- Immersion - Analytical Research
- Immersion - Invention Research
- Immersion - School-Based Enterprise
- Immersion - Service Learning

Demographics/Background

In what state do you teach?

At what type of school do you teach agricultural education? (Select all that apply)

- High School
 - Middle School
 - Career and Technical Education Center
 - Junior/Senior High
 - Private School
 - Charter School
 - Other
-

In what type of community is your school located?

- Rural
 - Suburban
 - Urban
-

How many school-based agricultural education teachers are in your program?
(Numbers only. If your program has a part-time teacher, please round up to a whole number. Ex: 3)

What grade levels are taught in your school-based agricultural education program?
(Select all that apply)

- Fifth Grade or lower
 - Sixth Grade
 - Seventh Grade
 - Eighth Grade
 - Ninth Grade
 - Tenth Grade
 - Eleventh Grade
 - Twelfth Grade
-

On average, what is the total enrollment for students in your school-based agricultural education program each year?
(Numbers only. Ex: 125)

Do you lead or co-lead the SAE implementation efforts in your school-based agricultural education program?

- Yes
 - No
-

How did you enter the Agricultural Education profession?

- Traditional Ag Education college preparation program
- My college preparation is in teaching, but not agricultural education
- Lateral Entry from a non-teaching, non-agriculture profession
- Lateral Entry from a non-teaching, technical agriculture profession
- Other

How many years (including this year) have you taught school-based agricultural education?

(Numbers only. Please round up to a full year. Ex: 8)

Gender

- Male
- Female
- Non-binary / third gender
- Prefer not to say

How old are you?

(Numbers only. Ex: 37)

Where have you learned about SAE for All? Identify all that apply.

- NAAE Conference Workshop
- National FFA Teacher Workshop
- Regional NAAE Conference Workshop
- State Professional Development
- Other Teachers
- SAE for All Website
- SAE for All Guides
- Email communication from The Council, National FFA, etc.
- Undergraduate Agricultural Education Class
- Graduate Agricultural Education Class
- Other
- I have not learned about SAE for All

Incentive

I am interested in entering my name into a drawing for a \$25 Amazon gift card.

- Yes
- No

First and Last Name:

Complete mailing address to send an Amazon gift card if your name is drawn:

Appendix B: IRB Approval



Jillian Ford <jrcasey2@ncsu.edu>

Lambert - 26214 - IRB Protocol assigned Exempt status

IRB Administrative Office <pins_notifications@ncsu.edu>
Reply-To: ncsuirboffice@ncsu.edu
To: jrcasey2@ncsu.edu

Tue, Aug 1, 2023 at 2:50 PM

Date: August 1, 2023

Study Title: Carter School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

NC State eIRB #: 26214

Funding Source:

Dear Misty Lambert,

The research proposal named above has received administrative review and has been approved on August 1, 2023 as exempt from the policy as outlined in the Code of Federal Regulations (Exempt d.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review.

This approval for this research study does not expire, but any changes must be approved by the IRB prior to implementation in accordance with the NC State university regulation and [IRB unit standards](#).

NOTE:

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NC State University projects, the assurance number is: FWA00003429.
2. Any changes to the research must be submitted and approved by the IRB prior to implementation in accordance with the NC State university regulation and [IRB unit standards](#).
3. If any problems occur, they must be reported to the IRB office within 5 business days.

To request an official, signed approval letter on NC State letterhead, please submit a request on our website under "[Request a Letter](#)"

Sincerely,

Jennie Ofstein, Ph.D.
Institutional Review Board (IRB) Director
North Carolina State University
irb-director@ncsu.edu
919.515.8754

Appendix C: IRB Amendment Approval



Jillian Ford <jrcasey2@ncsu.edu>

Lambert - 26214 - IRB Protocol renewal/amendment approved

IRB Administrative Office <pins_notifications@ncsu.edu>
Reply-To: ncsuirboffice@ncsu.edu
To: jrcasey2@ncsu.edu

Fri, Nov 17, 2023 at 2:31 PM

Dear Jillian Ford:

Date: 11/17/2023

Project Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

IRB#: 26214

PI: Misty Lambert

The renewal/amendment request for the project listed above has been approved in accordance with policy under 45 CFR 46. If your application was to amend your study protocol, and your study received expedited or full board review, this letter does NOT change the expiration date for your study. If you applied to renew your expedited or full board protocol, your new expiration date is shown above.

1. This board complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU the Assurance Number is: FWA00003429.
2. You must use the approved documents which have the status "approved" in the document viewer in the eIRB for your study.
3. Any changes to the protocol and supporting documents must be submitted and approved by the IRB prior to implementation via amendment request.
4. If any unanticipated problems or adverse events occur, they must be reported to the IRB office within 5 business days by completing and submitting the unanticipated problem form on the IRB website: <http://research.ncsu.edu/sparcs/compliance/irb/irb-forms/>
5. Any unapproved departure from your approved IRB protocol results in non-compliance. Please find information regarding how to avoid non-compliance here: http://research.ncsu.edu/sparcs-docs/irb/non-compliance_faq_sheet.pdf

Please let us know if you have any questions..

Appendix D: Recruitment Materials

Recruitment Email: State Staff contact #1 Dissertation Survey About SAE Distribution Request

Dear NAME,

Good morning, my name is Jillian Ford and I am a doctoral student at North Carolina State University pursuing a Doctorate of Education in Agricultural Education. I am conducting a survey for my dissertation research under the advisement of Drs. Misty Lambert, Travis Park, Joseph Donaldson, and Barbara Fair. The purpose of this study is to understand School-Based Agricultural Education (SBAE) teachers' perceptions and implementation of Supervised Agricultural Experience (SAE) and SAE for All across the United States. The results of this survey will help with practical efforts surrounding SAE on a national basis moving forward.

I am reaching out to you in hopes that you will share my survey with the SBAE teachers in your state. If you are willing to advertise the survey to the teachers in your state, I will be happy to share your state's specific data I gather with you after the conclusion of my dissertation in spring 2024. The report will summarize what is happening with SAE in your state, how well your teachers understand SAE for All, and how your teachers value the SAE component of SBAE. If you cannot send this kind of request or there is someone better on your team please feel free to connect them to me.

The survey should not take a significant amount of time away from the SBAE teachers in your state. We anticipate ~10-20 minutes to complete the survey. We are also offering an incentive for those that participate in this study, allowing teachers to choose to enter their name into a drawing for one of four \$25 Amazon gift cards to be selected later this year.

Please respond to this email no later than Thursday, December 14, 2023 to let me know if you are or are not willing to share my study with the SBAE teachers in your state. If opting in, please also share the number of SBAE teachers in your state.

Thank you in advance for your time and support of my dissertation research. If you are interested in more information about this study, please contact the principal investigator, Jillian Ford via email at jrcasey2@ncsu.edu.

Thank you,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Recruitment Email: State Staff Follow-Up (No response)
Reminder: Request to Distribute Dissertation Study About SAE

Dear NAME,

I wanted to send a quick reminder that on Thursday, December 7 you received an email inviting you to allow your state's School-Based Agricultural Education (SBAE) teachers to participate in a research study about their perceptions and implementation of Supervised Agricultural Experience (SAE) and SAE for All. This ~10-20 minute survey is my dissertation research at North Carolina State University, and I would greatly appreciate your support in disseminating the survey to the teachers in your state. I will happily share your state's data with you following the completion of my dissertation in spring 2024.

Please let me know if you are or are not willing to share my study with the SBAE teachers in your state by responding to this email no later than this Thursday, December 14, 2023. If opting in, please also share the number of SBAE teachers in your state.

Thank you in advance for your time and support of my dissertation research.

Thank you,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Recruitment Email: State Staff Response (Agree to participate)

Dear NAME,

Thank you for your willingness to share my dissertation study with the SBAE teachers in your state! We would love for you to send this survey as soon as possible, but we recognize that you know the teachers in your state and ask that you share the survey at the best time for your teachers. I have attached a Word Document to this email with suggested language and a link to complete the survey.

Thank you again for your time and support of my dissertation research.

Thank you,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Email Attachment (Suggested Wording to send to participants):

My name is Jillian Ford and I am a doctoral student at North Carolina State University pursuing a Doctorate of Education in Agricultural Education. I am reaching out to you in hopes that you will assist me in my dissertation research.

To participate, you should be at least 18 years old and currently teach agriculture to students in grades 6-12. The purpose of this study is to understand teachers' perceptions and implementation of Supervised Agricultural Experience (SAE) and SAE for All across the United States. The results of this survey will help with practical efforts surrounding SAE on a national basis moving forward.

Participation in this study is voluntary and involves clicking the link below, consenting or declining to participate on the first screen, and completing a survey (~10-20 minutes). While it can be completed on a mobile device, we do recommend completing the survey on a computer for the most reader-friendly format.

https://ncsu.qualtrics.com/jfe/form/SV_3ekaMSa9tRpsMAe

Through participation in this study, you can choose to enter your name into a drawing for one of four \$25 Amazon gift cards to be selected later this year.

Thank you in advance for your time and support of my dissertation research. If you are interested in more information about this study, please contact the principal investigator, Jillian Ford via email at jrcasey2@ncsu.edu.

Thank you,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Recruitment Email: State Staff Response (Decline to participate)

Dear NAME,

Thank you for your response to sharing my dissertation study with the SBAE teachers in your state. I appreciate the consideration and thank you again for your time.

Thank you,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Recruitment Email: State Staff Update #1 (Contact to request follow-up of instrument)

State Update for Dissertation about SAE

Dear NAME,

Thank you for sharing my dissertation study with the SBAE teachers in your state! I wanted to update you on the progress of data collection from your state. Currently, we have received [number] responses from [state].

To help strengthen the quality of information gathered, I am requesting that you once again share the survey with the teachers in your state at your earliest convenience. I have attached a Word Document to this email with suggested language and a link to complete the survey.

Thank you again for your time and support of my dissertation research.

Thank you,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Email Attachment (Suggested Wording to send to participants):

In mid-December, you were invited to participate in a research study about your perceptions and implementation of Supervised Agricultural Experience (SAE) and SAE for All in your agricultural education program. This survey is my dissertation research at North Carolina State University, and I would greatly appreciate your time in completing the survey below. You should plan to spend approximately 10-20 minutes on this survey. While it can be completed on a mobile device, we do recommend completing the survey on a computer for the most reader-friendly format.

https://ncsu.qualtrics.com/jfe/form/SV_3ekaMSa9tRpsMAe

Through participation in this study, you can choose to enter your name into a drawing for one of four \$25 Amazon gift cards to be selected later this year.

If you have any questions, or if you are interested in more information about this study, please contact the principal investigator, Jillian Ford via email at jrcasey2@ncsu.edu.

Thank you again,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Recruitment Email: State Staff Update #2 (Final contact)

Final Request - SAE Dissertation State Update

Dear NAME,

Thank you for sharing my dissertation study with the SBAE teachers in your state! I wanted to send one final update on the progress of data collection from your state. Currently, we have received [number] responses from [state].

To help strengthen the quality of information gathered, I am requesting that you share the survey with the teachers in your state one final time between now and **January 24th**. I have attached a Word Document to this email with suggested language and a link to complete the survey.

Thank you again for your time and support of my dissertation research.

Thank you,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Email Attachment (Suggested Wording to send to participants):

I wanted to reach out one final time to invite you to participate in a research study about your perceptions and implementation of Supervised Agricultural Experience (SAE) and SAE for All in your agricultural education program **by January 24**. This survey is my dissertation research at North Carolina State University and should only take about 10-20 minutes to complete. For the most reader-friendly format, we do recommend completing the survey on a computer instead of a mobile device. I would greatly appreciate your time in completing the survey below.

https://ncsu.qualtrics.com/jfe/form/SV_3ekaMSa9tRpsMAe

Through participation in this study, you can choose to enter your name into a drawing for one of four \$25 Amazon gift cards to be selected later this year.

If you have any questions, or if you are interested in more information about this study, please contact the principal investigator, Jillian Ford via email at jrcasey2@ncsu.edu.

Thank you again,

Jillian Ford
Principal Investigator
Doctoral Candidate and Graduate Assistant
Department of Agricultural and Human Sciences
North Carolina State University

NC STATE

Study Title: School-Based Agricultural Education Teacher Perceptions and Implementation of Supervised Agricultural Experiences

Appendix E: Participant States

Overview of the number of respondents from participating states (n = 505).

States That Agreed to Participate	2022 Teacher Total	<i>f</i>	%
Alabama	315	10	2.0
Alaska	5	0	0.0
Arizona	112	12	2.4
Arkansas	333	9	1.8
California	976	29	5.7
Colorado	163	4	0.8
Delaware	79	4	0.8
Georgia	553	34	6.7
Idaho	162	10	2.0
Illinois	520	5	1.0
Indiana	355	0	0.0
Iowa	298	9	1.8
Kansas	278	12	2.4
Kentucky	313	18	3.6
Louisiana	300	5	1.0
Michigan	150	11	2.2
Minnesota	331	34	6.7
Missouri	559	26	5.1
Montana	127	0	0.0
Nevada	41	0	0.0
New Hampshire	25	7	1.4
New Mexico	133	17	3.4
New York	401	7	1.4

States That Agreed to Participate	2022 Teacher Total	<i>f</i>	%
North Carolina	579	79	15.6
North Dakota	113	4	0.8
Oregon	185	10	2.0
Pennsylvania	258	21	4.2
Texas	2,441	19	3.8
Utah	175	8	1.6
Virginia	330	19	3.8
Wisconsin	359	26	5.1
Wyoming	65	9	1.8
Did not answer		46	9.1

Note. Teacher totals are from the NAAE Supply and Demand State Profiles.