

Influence of Secondary Agricultural Education Student Supervised Agricultural Experience Participation on Career Decision Self-Efficacy

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Abstract

As experiential learning can play an important role in an individual's career decision self-efficacy, this descriptive study sought to describe and compare secondary agricultural education students' and secondary non-agricultural education students' perceptions of career decisions with the intent of improving access to experiential learning opportunities at the secondary level. Using a descriptive research design, the study utilized the Career Decision Self-Efficacy Scale (CDSES) to measure the five subscales of career decision-making: self-appraisal, occupational information, goal selection, planning, and problem-solving. Data was collected from two sample populations. The first sample was drawn from a population of secondary Agricultural Education students enrolled in one of eight programs in Central Pennsylvania. The second sample was drawn from a population of secondary students not enrolled in Agricultural Education from one suburban high school in Central Pennsylvania. Agricultural Education students reported higher means in all five subscales of the CDSES compared to the non-Agricultural Education students. Both the Agricultural Education and non-Agricultural Education populations reported the highest means in Self-Appraisal ($M=3.83$, $M=3.69$) and Problem-Solving ($M=3.78$, $M=3.72$), respectively. Data for overall SAE participation were consistent with prior research. Agricultural Education students with greater participation in SAE activities reported higher means in all areas of the CDSES. Recommendations from study results include a greater inclusion and implementation of Foundational SAEs into Agricultural Education programs, expand experiential learning opportunities for non-CTE students, and further research into quantifying the impact of experiential learning participation on future employment of high school graduates.

Introduction

The workplace is evolving and changing at a rapid pace, with new careers and occupations being identified each year. The new look of the 21st-century workplace requires prospective employees to possess a new set of academic and technical skills, which should be introduced to students before high school

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graduation (Rainie & Anderson, 2017). Students seeking employment must not only possess academic and technical skills but also demonstrate employability skills and career decision-making abilities (ACTE, 2008). Career and Technical Education (CTE) meets the changing needs of learners and industry through rigorous coursework and high-quality, hands-on experiences that enable learners to explore careers and acquire skills to achieve success in their chosen career (Advance CTE, 2021). However, without proper guidance, high school graduates will often make impulsive career choices or uninformed career decisions, leading to dead-end jobs.

Career development is a lifelong process, and early adolescence is an especially critical time when our youth are forming beliefs about themselves as lifelong learners, while setting academic and career-related goals. Researchers (Falco, 2017; Fouad & Santana, 2017) have described adolescence as a critical time because students are exploring and acquiring academic and career-related interests, as well as attitudes and self-beliefs related to their competence in different domains. The process of career planning, career readiness, and vocational development has been explored through various career development theories, including Super's Theory, Bandura's Social Cognitive Theory, Holland's Theory of Vocational Personality, Cognitive Information Processing Theory, and the Theory of Career Construction. Understanding these established (and newer) career development theories is vital for effective career counseling and will help support students in their career growth (Lent et al., 1994; Brown & Lent, 2012; Tang, 2019). Career Decision Making theories also purport that people make decisions based on self-characteristics (Krumboltz, 1996) and interaction between the job environment and self-characteristics (Holland, 1997).

The ability of an individual to evaluate their abilities greatly influences the range of career options considered, the degree of interest shown in them, and the vocational paths pursued (Betz & Hackett, 1986; Lent & Hackett, 1987). Vocational psychology distinguishes between the "content" of career choice and the "process" of career choice (Crites, 1981). Early research focused on the influencers of the content of career choice, while more recent research has turned to the role that efficacy expectations (self-efficacy) play in the process of career decision making.

Based on Crites' theory of career maturity, Taylor and Betz (1983) initially defined career decision self-efficacy as the individual's belief in their ability to complete tasks necessary for making career decisions. The Career Decision Self-Efficacy Scale (CDSES), developed by Taylor and Betz (1983), included self-estimates of abilities in the following areas: (1) goal selection, (2) occupational information, (3) problem solving, (4) planning, and (5) self-appraisal. A key assumption in the development of the scale was the underlying idea that effective career decision-making not only involves the development of career skills but also confidence in one's ability to make a decision. Individuals possessing weak career decision-making self-efficacy will have impeded career exploratory behaviour. Low career decision-making self-efficacy can predict career indecision and inform the development of career education counselling programs before students enter the workforce, potentially leading to dead-end jobs (Hackett, 2005).

In a national survey of 2,156 parents/guardians and learners currently involved in or considering CTE, Advance CTE found that when participants were asked to rank aspects of education in terms of importance, more than 45 percent of families — across race and income — chose career exploration and gaining skills as their top two priorities compared to less than 20 percent of families that selected experiences such as participating in sports, clubs and extracurricular activities (2021). Within CTE, several programs exist that purport to provide students with the essential skills needed to thrive in the twenty-first-century workplace.

Agricultural education exists, in part, to provide students with the development of life skills that enable them to discover their career path and achieve success through experiential learning (Baker, Robinson, & Kolb, 2012; Roberts & Ball, 2009). Students must be able to perceive the relevance and potential transfer of the curriculum to the situation or context in which they may apply their understanding.

To achieve this, educators must design experiences that consider the existing knowledge and skills, and help students make connections between their experiences and future careers (Arnold, Warner, & Osborne, 2006). Within school-based agricultural education, the Supervised Agricultural Experience (SAE) is purported to be the hallmark for the practice and evaluation of career readiness (Phipps et al., 2008). Researchers (Dailey et al., 2001; Robinson & Haynes, 2011; Ramsey & Edwards, 2004) define SAE as a "planned sequence of agricultural activities of educational value" (Phipps, Dyer, Osborne, & Ball, 2008) and consider it instrumental in developing the skills that employers continually seek. SAEs of all varieties should align with career plans and be student-led, connected to agriculture, instructor supervised, and measurable experiences occurring through work-based learning (The Council, 2017). SAE projects in any area typically lead to SAE programs, and ideally, to future employment in a specific area of agriculture (Phipps et al., 2008).

An SAE consists of all the agricultural activities of educational value conducted by a student outside of class time. An SAE is supervised by the Agricultural education teacher, employers, or another adult who serves as a mentor. SAEs provide students the opportunity to explore the agricultural industry through experience, or "learning by doing." SAEs are important in the career development process, allowing students to gradually acquire career skills, work experience, and decision-making abilities related to occupational choices (Newcomb et al., 2004). The study of SAE programs' ability to prepare students for the ever-changing workforce helps address Priority 3 of the AAAE Research Agenda, which calls for a sufficient scientific and professional workforce that addresses the challenges of the 21st-century workplace. (Roberts, et al., 2016). Extensive studies have examined SAEs and their impact on students.

Operational Definitions

Active SAE - The present study defines an active SAE program as students completing financial and time investment records into the Agricultural Experience Tracker (AET), an online platform in which students keep records regarding their Supervised Agricultural Experiences.

Agricultural Student - A student (age 14-18) in grade 9-12 that is enrolled in at least one course taught by an Agricultural Educator during the 2017-18 school year.

Non-Agricultural Student - A student (age 14-18) in grade 9-12 that is not enrolled (or has never been enrolled) in a course taught by an Agricultural Educator during the 2017-18 school year.

Theoretical Framework

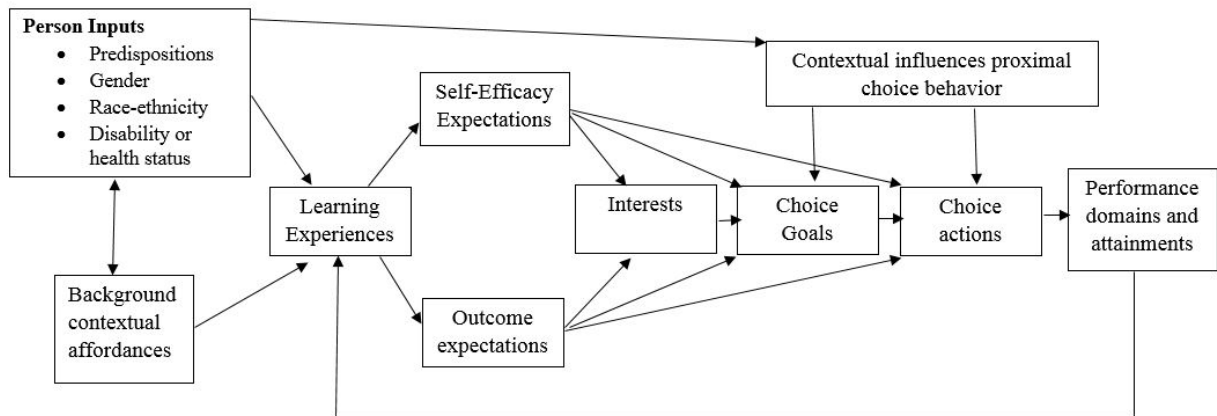
The theoretical framework guiding this study is the Social Cognitive Career Theory (SCCT) developed by Lent et al. (2002). The Social Cognitive Career Theory is based on Bandura's Social Cognitive Theory, specifically the development of self-efficacy beliefs. Bandura (1995) defines self-efficacy as the "belief in one's capabilities to organize and execute the courses of action required to manage prospective situations." The amount of efficacy beliefs an individual possesses will determine the effort expended to produce a desired behaviour and how long they will persist in completing the task. Efficacy expectations are a major determinant of people's choice of recreational activities, occupational aspirations, and goals.

Following Bandura's observation that humans are both producers and products of their own environment, numerous career development theories have followed the trend of viewing individuals as active agents in their own career development (Borgen, 1991). Career counsellors have long believed that the beliefs an individual holds (about their abilities, environments, and possible career paths) play a pivotal role in the process of career choice and career development. Additionally, career counsellors emphasize the importance of self-exploration and related occupational activities and recognize that career development is determined by factors that an individual can control (Lent et al., 2002).

The Social Cognitive Career Theory (SCCT) presents an evolving framework for career development that builds upon Bandura's Social Cognitive Theory, assuming that humans can influence their development. (Lent, et al., 2002). While differing from previous career theories, the Social Cognitive Career Theory emphasizes that specific experiential learning processes influence the cognitive process, enabling this theory to adequately account for the development of outcome expectations through personal mastery experiences, as outlined in Bandura's sources of self-efficacy.

Figure 1

Model of Person, Contextual, and Experiential Factors Affecting Career-Related Choice Behaviour as described by Lent, Brown, and Hackett (2002)



Purpose and Objectives

The purpose of the study was to describe Central Pennsylvania secondary Agricultural Education student perceptions of career decision self-efficacy based upon involvement in a Supervised Agricultural Experience (SAE) as operationally defined in the study. The following research objectives will guide the study:

1. Describe secondary Agricultural Education student involvement in Supervised Agricultural Experiences in eight programs in Central Pennsylvania.
2. Describe the career decision self-efficacy of secondary Agricultural Education students in eight programs in Central Pennsylvania.
3. Determine the relationship between secondary Agricultural Education student involvement in a Supervised Agricultural Experience and secondary Agricultural Education students' career decision self-efficacy.
4. Compare the career decision self-efficacy of secondary Agricultural Education students to the career decision self-efficacy of secondary students not enrolled in an Agricultural Education program in one suburban high school in Central Pennsylvania.

Limitations

The study aimed to obtain a census of secondary agricultural education students in a three-county area in Central Pennsylvania. The study defines an active SAE program as students completing financial and time investment records in the Agricultural Experience Tracker (AET), an online platform in which students keep records regarding their Supervised Agricultural Experiences. Recognizing that Agricultural

Education programs vary across the state and nation, the results of this study should be generalized with caution due to local autonomy of Agricultural Education programs in Pennsylvania. This study cannot control extraneous variables such as student education about SAE programs, scope of SAE programs required by local programs, or available school facilities to conduct SAE programs.

Another limitation of this study is the disparity in the number of schools included in the comparison groups. Specifically, the study examines one school that implements work-based learning and compares it to eight schools that utilize supervised agricultural experiences. This uneven distribution may result in an unbalanced representation of the respective learning models. Additionally, the unique characteristics and contextual factors of the single WBL school, such as its geographical location, demographic composition, and institutional resources, may differ significantly from those of the SAE schools, which could introduce confounding variables that were not accounted for in this study. Consequently, the observed differences in outcomes between the WBL and SAE schools may be influenced by these extraneous factors rather than the learning models themselves.

Future research should aim to include a more balanced sample size and consider a broader range of schools to enhance the comparability and validity of the results. Furthermore, a longitudinal approach could provide deeper insights into the long-term impacts of WBL and SAE on student outcomes. After completing this study, the National FFA Organization and the Council for Agricultural Education released the SAE for ALL updates. While we believe the findings are still informative to the reader, this limitation remains.

Methods and Procedures

The descriptive study utilized secondary Agricultural Education students' and non-Agricultural Education students' responses regarding career decision self-efficacy based upon their level of involvement in experiential learning (i.e., SAEs). Quantitative methods were employed through a survey using closed-ended questionnaire items on a Likert scale.

Population and Sample

Data from two target populations were utilized to address the research objectives. The first target population consisted of students in grades 9–12 enrolled in a secondary Agricultural Education program in a three-county area of Pennsylvania. Eight high schools with Agricultural Education programs had the opportunity to participate in this study, with six programs receiving permission to do so. The purposeful selection of programs arose due to geographical proximity. Results from this study can only be generalized to this population due to the use of convenience sampling. The sample consisted of 285 completed instruments. The sample was composed of 25% freshmen ($n = 73$), 24% sophomores ($n = 67$), 33% juniors ($n = 93$), and 18% seniors ($n = 52$).

To contextualize the sample, the total number of secondary Agricultural Education students in Pennsylvania in 2018 was 12,946 (Pennsylvania FFA Association, 2018). The broader convenience sample from which this study's participants were drawn included approximately 1,100 students, representing roughly 8.5% of the total state Agricultural Education student population.

The second target population consisted of students in grades 9–12 not enrolled in a secondary Agricultural Education program at a suburban high school. This school also offered an Agricultural Education program, and students enrolled in that program were included in the first population described above. The sample for this population consisted of 495 completed instruments. Seniors comprised 25% of the sample ($n = 122$), while freshmen represented 14% ($n = 73$).

The total number of students in grades 9–12 across Pennsylvania in 2018 was 570,672 (Commonwealth of Pennsylvania, 2018). The convenience sample from which this portion of the study was drawn consisted of 2,610 students at the suburban high school, representing approximately 0.50% of the overall grade 9–12 student population in the state.

Instrumentation

The instrument used in this study was adapted from a previous study by Marx, Simonsen, and Kitchel (2014), which utilized the Career Decision Self-Efficacy Scale–Short Form (CDSE-SF) developed by Betz et al. (1996). Total scores on the CDSE-SF have demonstrated moderate to strong correlations with various aspects of career-related behaviors, including career search activity, vocational exploration, career commitment, career indecision, vocational identity, and career maturity (Miller et al., 2009). These scores are valuable in identifying areas where individuals have greater or lesser confidence in their career decision-making abilities and can serve as indicators of students who may benefit from additional academic or career support. Additionally, the instrument has been used to evaluate the effectiveness of educational and career interventions.

In this study, the instrument was used to examine the relationship between student participation in Supervised Agricultural Experience (SAE) programs and their career decision self-efficacy. The instrument was divided into multiple sections, depending on the student population.

For students enrolled in Agricultural Education, the instrument included three sections:

Section one consisted of 25 items from the CDSE-SF and was identical for both student populations. This section measured students' confidence in their ability to perform career decision-making tasks and included five subscales: self-appraisal, occupational information, goal selection, planning, and problem-solving. For this study, section one yielded a Cronbach's alpha of 0.94, indicating high internal consistency.

Section two was developed to assess students' perceptions of how their SAE experiences influenced their career decisions. It consisted of 10 items, each beginning with the prompt: "How much influence on your career decision did the following items have?" Face and content validity for this section were established by a panel of Agricultural Education faculty at Pennsylvania State University. This section demonstrated a Cronbach's alpha of 0.76, indicating acceptable internal reliability.

Section three included six demographic items specific to Agricultural Education, such as grade level, years of FFA membership, type of SAE project, and highest FFA degree earned (used as an indicator of SAE involvement). Section three had a Cronbach's alpha of 0.73, reflecting acceptable internal consistency for the demographic variables coded for analysis.

For students not enrolled in Agricultural Education, the instrument contained two sections:

Section one was identical to the Agricultural Education instrument and measured career decision self-efficacy using the 25 CDSE-SF items. Reliability statistics for this section among non-Agricultural Education students also yielded a Cronbach's alpha of 0.94.

Section two included demographic information relevant to the non-agricultural population, such as grade level, gender, and participation in voluntary experiential learning opportunities (e.g., job shadowing, cooperative education, internships, apprenticeships, or part-time employment). Because these demographic items were nominal, internal reliability statistics were not applicable for this section.

Both section one and section two (where applicable) used a 5-point Likert-type scale ranging from 1 (*no influence at all*) to 5 (*a great deal of influence*).

Data Collection

Agricultural Education students and non-Agricultural Education students completed the survey instrument online via Qualtrics. Detailed written instructions guided students to complete all sections of the instrument. In both student populations, convenience sampling comprised the selection of students based upon the opt-in of the teacher and student assent to complete the instrument.

Data Analysis

The Agricultural Education student instrument was used to determine the perceived self-efficacy for 25 statements related to career decisions. Student ratings range from 1 (no confidence) to 5 (complete confidence). Mean scores and standard deviation were reported for each the subscales of the Career Decision Self-Efficacy Scale (CDSES) (self-appraisal, occupational information, goal selection, planning, and problem solving). An overall CDSE mean was also calculated. For section 2 of the Agricultural Education Student Instrument, means and standard deviation were also reported to indicate each student's reported influence of Supervised Agricultural Experiences on career decisions. A comparison between a student's level of involvement in a Supervised Agricultural Experience (i.e., highest FFA degree earned) and CDSE scores was also calculated utilizing an independent t-test. Frequencies were reported for the SAE types and the component of the three-circle model that greatly influenced each Agricultural student's career decision.

The non-Agricultural Education student instrument was used to determine the perceived self-efficacy for 25 statements related to career decisions. Student ratings range from 1 (no confidence) to 5 (complete confidence). Mean scores and standard deviation were reported for each the subscales of the CDSES (self-appraisal, occupational information, goal selection, planning, and problem solving). An overall CDSE mean was calculated as well. Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 25.0.

Findings

Objective one aimed to describe secondary Agricultural Education student participation in Supervised Agricultural Experiences. The Agricultural Education student instrument determined the SAE involvement of students enrolled in an Agricultural Education class. Respondents were asked to report the type of SAE program(s) they were involved with outside of class time. Nearly 50% of respondents reported not having an established SAE program, while Entrepreneurship (ownership) projects were the highest reported SAE type of the students that conduct an SAE. Foundational projects were the lowest reported SAE type of the students. Table 1 provides the breakdown of SAE types.

Table 1

Supervised Agricultural Experience Participation among Secondary Agricultural Education Students (n=285)

	n	%
Entrepreneurship	58	20.3
Placement	35	12.3
Research	21	7.4
Foundational	12	4.2
Service-Learning	15	5.3
No established SAE	140	49.1

Describing the career decision self-efficacy of secondary Agricultural Education students was research objective two. The CDSE instrument assessed students' level of career decision self-efficacy and thereby their level of career decisiveness (Betz et al., 2005). The overall instrument mean for this study was 3.78 (SD = .93), which signified respondents were in the real limits of self-efficacy in relation to whether or not they felt they could make career-related decisions. Mean scores for CDSE constructs are reported in Table 2. Students' efficacy for their ability in Self-Appraisal (M = 3.83, SD = .91), Planning (M = 3.79, SD = .93), and Problem-Solving (M = 3.78, SD = 0.93) fell within the upper limits of 'moderate confidence.' Occupational Information and Goal Selection presented the lowest means: 3.72 (SD = .92) and 3.66 (SD = .94), respectively.

Table 2

Career Decision Self-Efficacy Among Secondary Agricultural Education Students (n = 285)

CDSE Construct	Mean	SD
Self-Appraisal	3.83	0.91
Occupational Information	3.72	0.92
Goal Selection	3.66	0.94
Planning	3.79	0.93
Problem Solving	3.78	0.93

Note: Each construct included 5 items which were measured on a scale: 1 (no confidence), 2 (very little confidence), 3 (moderate confidence), 4 (much confidence), and 5 (complete confidence).

The purpose of a Supervised Agricultural Experience is to provide individual experiential learning opportunities for students enrolled in Agricultural Education. As a student continues to document time invested and money earned from their respective SAE, students are eligible to receive various FFA degrees based upon achievement levels. Using an independent t-test to compare Agricultural Education students who earned the Greenhand Degree (which has no hours required) to Agricultural Education students who earned the State Degree, Table 3 reports means for each subscale of the Career Decision Self-Efficacy Scale. Levene's Test for Equality of Variances reported a significance of 0.05 or greater for each subscale (Goal Selection = 0.132, Self-Appraisal = .743, Occupational Information = .486, Planning = .499, Problem Solving = .335), meaning that the variability between both groups of students is about equal.

The differences between Greenhand Degree and State Degree recipients were found to be statistically significant and can be attributed to the amount of hours spent (and documented) in their respective SAE. Students who earned the State Degree reported higher means in all subscales of the CDSEs, indicating the engagement in experiential learning through the platform of Supervised Agricultural Experiences can make a difference in the ability to make a career decision. A Spearman's rank-order correlation was run to determine the relationship between "FFA Degree Earned" and overall CDSE mean.

There was a positive correlation, which was statistically significant ($r_s=.185, p=.005$). An independent t-test confirmed that there was no statistical significance between early and late Agricultural Education respondents.

Table 3

Impact of SAE Involvement on Career Decision Subscales

Subscale	FFA Degree Earned	N	Mean	Standard Deviation	p-value
Goal Selection	Greenhand	73	3.65	0.57	0.005
	State	52	3.98	0.67	
Self-Appraisal	Greenhand	73	3.74	0.63	0.033
	State	52	3.99	0.64	
Occupational Information	Greenhand	73	3.72	0.59	0.025
	State	52	3.98	0.66	
Planning	Greenhand	73	3.44	0.75	0.002
	State	52	3.86	0.68	
Problem-Solving	Greenhand	73	3.40	0.63	0.013
	State	52	3.71	0.68	

Note: The Greenhand Degree requires a "satisfactory plan for an SAE." The State Degree requires 300 unpaid hours or \$1000.00 earned or productively invested into an SAE.

Objective three sought to determine the impact that individual components of a Supervised Agricultural Experience program exert on Agricultural Education students' career decision self-efficacy. Only students who self-reported an active SAE responded to section two of the instrument. Means and standard deviations for each of the ten items in section two of the Agricultural Education student questionnaire are reported in Table 4. Reporting and interpretation of item means were held consistent with Taylor and Betz's (1983) reporting of CDSE means. The items assessed aspects of a Supervised Agricultural Experience that influenced a student's career decision. Four items were found to have much influence ($M > 3.90$) while four items had moderate influence ($M = 3.80-3.89$) on agricultural education students' career decisions. Students indicated that "Participating in an SAE project unique to your interests" ($M = 4.03, SD = 1.59$) had the most influence on their career decisions, followed by "Working with a mentor to develop your SAE project" ($M = 4.02, SD = 1.65$). "Developing your SAE as a first-year FFA member" had the least influence ($M = 3.71, SD = 1.69$).

To investigate the impact of Supervised Agricultural Experiences compared to the other components of an Agricultural Education program, students reported which program component had the greatest influence on making a future career decision. With nearly 50% of respondents reporting that they have "no established SAE," 42.9% of students ($n = 122$) reported that classroom instruction had the greatest influence on their career decision, followed by the National FFA Organization at 35.8% of students ($n = 102$). Only 21.4% of students reported that involvement in a Supervised Agricultural Experience was the greatest influence on their career decision.

Table 4

Influence of Supervised Agricultural Experience Items on Career Decisions Among Secondary Agricultural Education Students (n = 145)

Item	Mean	SD
Participating in an SAE project unique to your interests?	4.03	1.59
Working with a mentor (other than the Agricultural teacher) to develop your SAE?	4.02	1.68
Completing SAE plans and budgets to outline your future SAE projects?	3.97	1.65
Completing records for your SAE?	3.91	1.68
Having the Agricultural Teacher conduct an SAE visit to discuss the progress of your SAE?	3.88	1.71
Interacting with local businesses/individuals while conducting your SAE project(s)?	3.85	1.71
Receiving a State/National Proficiency for your SAE?	3.85	1.79
Developing your SAE project after your first year of membership?	3.80	1.65
Receiving a Chapter Proficiency for your SAE?	3.75	1.70
Developing your SAE project as a first-year member?	3.71	1.69

Note: Each construct included 5 items which were measured on a scale: 1 (influence), 2 (very little influence), 3 (moderate influence), 4 (much influence), and 5 (complete influence).

A further analysis of the perceived value of each program component was conducted to compare the perceptions of SAE completers compared to non-SAE completers. Results are summarized in Table 5. Students not completing an SAE (n = 145) reported that classroom instruction was the most valuable, while SAE completion was the least valuable. For students reporting to have an active SAE (n = 140), FFA participation was the most impactful component of the program (49.2% of respondents), while SAE involvement was the second-most impactful (33.6% of respondents).

Table 5

Perceived Value of SBAE Components by SAE Completers and Non-SAE Completers

Component	SAE Completers (n=140)		Non-SAE Completers (n=145)	
	n	%	n	%
Classroom	24	17.2	109	75.0
FFA Participation	69	49.2	32	21.5
SAE Involvement	47	33.6	4	3.5

Objective four compared the career decision self-efficacy of students enrolled in Agricultural Education classes to students not enrolled in Agricultural Education classes. Using an independent t-test to compare Agricultural Education students and Non-Agricultural Education students, the following results were found for each subscale of the Career Decision Self-Efficacy Scale in Table 6. Levene's Test for Equality of Variances reported a significance of 0.05 or greater for each subscale (Goal Selection = 0.520, Self-Appraisal = .470, Occupational Information = .335, Planning = .495, Problem Solving = .251), meaning that the variability between both groups of students is about equal.

The p-value of the t-test indicated that the differences reported between groups are statistically significant for each subscale of the CDSES. Differences between these groups of students can include the use of a different educational model in Agricultural Education, which incorporates experiential learning to reinforce classroom content. Agricultural Education students reported higher means in all 5 CDSE indicator categories (Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem-Solving). Agricultural Education students reported an overall mean of 3.78 (SD=0.93) while non-Agricultural Education students reported an overall mean of 3.63 (SD=0.97). Results from this objective can support the

Social Cognitive Career Theory (SCCT) which supports the outcome of improved self-efficacy as a result of occupational learning experiences.

Table 6*Agricultural Education versus Non-Agricultural Education Student CDSE Subscales*

Subscale	FFA Degree Earned	N	Mean	Standard Deviation	Effect Size	p-value
Goal Selection	Non-Ag Education	495	3.57	0.93	0.0963	0.012
	Ag Education	285	3.66	0.94		
Self-Appraisal	Non-Ag Education	495	3.69	1.02	0.1448	0.002
	Ag Education	285	3.83	0.91		
Occupational Information	Non-Ag Education	495	3.56	1.01	0.1656	0.035
	Ag Education	285	3.72	0.92		
Planning	Non-Ag Education	495	3.64	1.02	0.1544	0.028
	Ag Education	285	3.79	0.93		
Problem-Solving	Non-Ag Education	495	3.72	0.91	0.0652	0.05
	Ag Education	285	3.78	0.93		

Note. Each construct included five items which were measured on a scale: 1 (no confidence), 2 (very little confidence), 3 (moderate confidence), 4 (much confidence, and 5 (complete confidence).

Conclusions and Recommendations

In this study, researchers described the influence that components of a Supervised Agricultural Experience (SAEs) had on secondary Agricultural Education student's ability to make a career decision. Additionally, the study compared the career decision self-efficacy of students enrolled in an Agricultural Education class to that of students who were never enrolled in an Agricultural Education class. Students in grades 9-12 were selected to further analyze potential differences in self-efficacy as students become more involved in experiential learning opportunities.

Objective one findings lead us to conclude that Entrepreneurship SAEs are the most popular SAE type from this population, which is consistent with Stewart and Birkenholz (1991). Placement SAEs were the second most prevalent SAE type with 12.4%. It should be noted that nearly 50% of our sample did not actively participate in a Supervised Agricultural Experience at the time of the questionnaire. Since students in grades 9-12 were invited to participate, a deeper analysis can reveal which grade level of the population do not currently participate in an SAE. The study results are consistent with findings that report SAE participation is on the decline while SBAE enrolment continues to increase (Retallick & Martin, 2008). Identified barriers such as increasing enrolments, changing school facilities, and alternatively-certified Agricultural Educators can create challenging environments to implement quality SAE programs. Increased inclusion and introduction of Foundational SAEs into Agricultural Programs is needed to meet the changing demographics of Agricultural Education students and increasing responsibilities of Agricultural Educators. Ongoing professional development about strategies to integrate Foundational SAEs into established Agricultural Education programs as a means to introduce SAEs to first-year students is recommended.

For objective two, we concluded that Agricultural Education students have a moderately high confidence and ability to make career decisions. The respondents' highest mean scores were Self-Appraisal ($M=3.82$, $SD=0.91$), which indicates students' confidence in their ability to identify personal values and personal attributes relating to career choice. Planning ($M=3.79$, $SD=0.93$) and Problem-Solving ($M=3.78$,

SD=0.93) followed closely behind and demonstrated that Agricultural Education students have a moderate confidence in their ability to create advanced plans relating to occupational choices. The lowest mean in Goal Selection (M=3.66, SD=0.94) suggests that students need further education in creating occupational goals and developing strategic steps to accomplish goals in a sequential timeline to achieve realistic goals. The study documented that students with greater levels of experiential learning develop skills that lead to a higher career-decision self-efficacy. CTE instructors, including Agricultural Educators, should be provided with appropriate contract time to supervise, mentor, and assist students in developing progressive, relevant, and meaningful experiential learning programs (including SAEs). Future research should investigate the length of current extended contracts and the level of SAE involvement in an Agricultural Education program.

The means reported in objective three allowed the authors to conclude that certain items relating to the implementation of a Supervised Agricultural Experience have a greater influence on a student's career decision than other portions of the SAE program. Participating in an SAE unique to career interests (M=4.03, SD=1.59) reported the highest means and reinforced the versatile nature of each student's SAE program and the ability of an SAE to provide skills, knowledge, and attributes specific to certain careers. Working with a mentor (other than the Agriculture Teacher) also reported high means (M=4.02, SD=1.68) and signaled the importance of personal relationships on career-related decisions. Award programs such as State and Chapter Proficiency Awards were among the lowest means reported, signifying that receiving an award is not viewed as a valuable component of making an occupational choice. Quality SAEs involve numerous aspects to be successful. Having student insight into which components of an SAE are the most meaningful can help Agricultural Educators develop new methods for conducting SAEs that can include larger populations of students and not just those who enter the classroom with established SAEs. Developing SAEs unique to each student is challenging, but with the use of mentors other than the Agriculture Teacher, additional SAEs can be developed and monitored.

Objective four provided relevant career decision self-efficacy information about non-Agricultural Education students and allowed us to compare both groups of students to discover trends. Agricultural Education students reported higher means in all 5 CDSE indicator categories (Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem-Solving). Agricultural Education students reported an overall mean of 3.78 (SD=0.93) while non-Agricultural Education students reported an overall mean of 3.63 (SD=0.97). Results from this objective support the Social Cognitive Career Theory (SCCT), which supports the outcome of improved self-efficacy as a result of occupational learning experiences. The study documented that students involved in a specific Career and Technical Education program develop skills that lead to a higher career-decision self-efficacy. With changing career-readiness graduation requirements by Pennsylvania Departments of Education, Career and Technical Education experiential learning programs, such as SAE, should be considered valuable career development experiences that can count toward such graduation requirements.

The Social Cognitive Career Theory (SCCT) presents an evolving form of career development that stems from Bandura's Social Cognitive Theory and embraces the assumption that humans can influence their own development. (Lent, et al., 2002). The Social Cognitive Career Theory highlights that certain experiential learning processes will influence the cognitive process which allows this theory to adequately account for the development of outcome expectations through personal mastery experiences as outlined in Bandura's sources of self-efficacy (Lent, et al., 2002). Agricultural education programs and other Career and Technical Education programs have the unique opportunity to provide numerous outlets to experiential learning opportunities. Although SAE participation is facing challenges such as lack of resources, limited teacher time, and administrative barriers, value can be seen from including experiential learning as part of an Agricultural Education program. With the expansion of Foundational SAEs and inclusion of Service Learning SAEs, students from non-agricultural backgrounds can begin to establish quality SAEs that will provide the same career-preparation skills as traditional SAE types (The Council for Agricultural

Education, 2018). Agricultural Education teachers and teacher education programs should continue to explore new methods for supervision of SAEs to overcome barriers of implementation. Future research should explore the changes in career decision self-efficacy as students progress through an Agricultural Education program to identify which experiences (i.e., leadership conferences, SAEs, CDEs, chapter/state leadership positions) provide the most impact on career decisions.

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