Examining Iowa Agricultural Education Teachers' Use of Foundational Career Exploration Activities Within the SAE for All Framework

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Introduction and Literature Review

Experiential learning facilitated through students conducting their own quality supervised agricultural experience (SAE) is an integral part of an agricultural education program (Croom, 2008; Rank & Retallick, 2017; Smith & Rayfield, 2016; Toombs et al., 2022). Yet, SAE implementation has been cited as a major barrier for agricultural educators (Retallick, 2010; Rubenstein et al., 2016; Smith & Rayfield, 2016). In addition to building career awareness to meet the growing demand to satisfy the over 22.1 million agricultural careers in the United States (USDA Economic Research Service, 2024), SAEs also offer academic and social opportunities for students to grow in many unique ways (Haddad & Marx, 2018; Mouser et al., 2019; Toombs et al., 2022). To combat this challenge, the National Council for Agricultural Education (2015) developed the SAE for All initiative—a concerted effort to help educators provide all agricultural education students with the opportunity to apply their leadership development and classroom experiences through having their own, personalized SAE. Under the SAE for All model, SAE programs can be classified as foundational or immersion. Foundational SAEs are designed to provide students with employability skills, career exploration skills, financial planning skills, safety skills, and much more (National Council for Agricultural Education, 2015). These experiences can then build into a student developing an immersion SAE, which allows students to explore and apply these areas through research, service-learning, entrepreneurial, or work-based learning experiences in alignment with their interests and goals (National Council for Agricultural Education, 2015). This study was designed to better understand the ways Iowa agricultural educators are promoting one of the main types of foundational SAE programs, career exploration, within their agricultural education programs.

Despite SAE opportunities being student-led, the agricultural education teacher plays a significant role in determining the level of success a student may have. While the strongest and most meaningful projects are student-led and instructor-supervised, having the ability to seek help from and reflect with an agricultural education teacher is crucial to helping the SAE project continue to grow (Rubenstein et al., 2016). Providing students with opportunities to begin to explore these areas of interest through foundational, career exploration SAE programs can be one way agricultural educators can play a role in developing their students' SAE programs (National Council for Agricultural Education, 2015).

Career exploration is a form of foundational SAE which can be done by students at any grade level, including the middle school level. For the purposes of this study, we defined career exploration using the guidance by the National Council for Agricultural Education (2015), which focuses on students completing career interest inventories and exploring their career goals through experiences inside and outside of the classroom. These foundational experiences may entice students into developing immersion SAEs that help them build upon and explore their interests even further in the future. A study by Eck & Davis (2024) aimed to provide a deeper understanding of the barriers and successes to implementing SAE-focused experiences at the middle school level, along with exploring the general perceptions and beliefs regarding SAE at

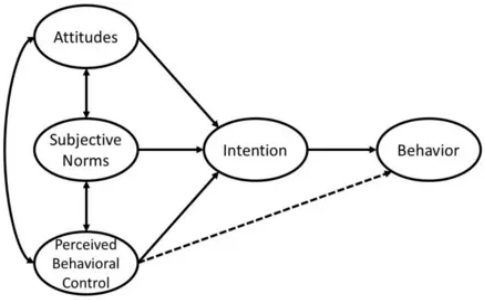
the middle school level; 34 experts reaching consensus on several items, acknowledging SAE for All opportunities such as career exploration allow teachers to offer opportunities across the 3-component model (Croom, 2008), assists them in teaching responsibility to their students, and that SAEs build upon student classroom knowledge (Eck & Davis, 2024).

Theoretical Framework

Ajzen's (1991) Theory of Planned Behavior guided the development of this study. In his theory, Ajzen (1991) indicated one's perspectives or beliefs toward a certain task (attitudes), one's perceptions of others' expectations placed upon them to complete a certain task (subjective norms), and one's own personal confidence related to a certain task (perceived behavioral control), influence one's intention to complete the task, and ultimately their decision to do so. This study aimed to see if educators were already implementing career exploration-focused activities within their programs, but also to gauge their attitudes, perceived expectations, and perceived levels of confidence with career exploration activities, consistent with Ajzen's (1991) theory. Figure 1 provides an overview of the relationship of attitudes, subjective norms, and perceived behavioral control with determining one's intention or behaviors.

Figure 1

Theory of Planned Behavior (Ajzen 1991; Sansom, 2021)



Purpose and Objectives

The purpose of this study was to assess Iowa agricultural educators' use of career exploration SAE activities within their agricultural education programs. This purpose was guided by three research objectives:

1. To assess agricultural educators' perceptions related to implementing SAE career exploration activities within their agricultural education programs.
2. To assess agricultural educators' perceptions of SAE career exploration activities based on student grade levels.
3. To identify what types of SAE career exploration activities agricultural educators utilize within their agricultural education programs.

Methods

An IRB-approved questionnaire consisting of demographic and Likert-type scale items was distributed to 123 agricultural educators attending the 2025 Iowa winter agricultural educators' conference from a frame of 165 attendees, achieving a response rate of 74.5%, which is considered a strong response rate for a survey (Sakshaug et al., 2019), contributing to greater confidence in our findings. Respondents offered anywhere from 1 to over 30 years of teaching experience ($\bar{x} = 8.1$; $\sigma = 7.2$) and reported varying comfort levels and experiences related to SAE

and SAE for All implementation. There were 88 females (71.5%) and 35 males (28.5%) who agreed to participate. Data were collected at the start of a workshop using a Qualtrics form; all attending the workshop were invited to participate. Validity was achieved through utilizing a panel of experts who reviewed the questionnaire prior to the study to ensure the instrument upheld the framework and the study objectives (Thyer, 2010). Identifiers including names and school names were removed from the data prior to analysis (Creswell & Creswell, 2018). Data were evaluated using SPSS and Excel using one-way ANOVAs, *t*-tests, and descriptive statistics.

Statistical analysis examined differences in groups, including years of experience, the grade level the program begins, and the grade level teachers introduce SAEs to students. Assumption testing was conducted prior to any statistical analyses to ensure homogeneity and normality, and no violations were found (Frankfort-Nachmias et al., 2021). However, upon analysis of the findings, there were no statistically significant relationships found, potentially attributed to the limited number of items on the instrument and a small sample size (Frankfort-Nachmias et al., 2021).

Results

Objective 1 sought to assess agricultural educators' perceptions related to implementing SAE career exploration activities within their programs. Table 1 provides a summary of teachers' perceptions of SAEs and career exploration in general. Overall, agricultural educators encourage students to have an SAE ($\bar{x} = 4.24$; $\sigma = 0.80$), they like providing career exploration opportunities ($\bar{x} = 4.49$; $\sigma = 0.65$), and they feel confident in delivering these opportunities ($\bar{x} = 4.24$; $\sigma = 0.76$). However, some question the rigor ($\bar{x} = 3.32$; $\sigma = 0.99$) and relevance ($\bar{x} = 3.86$; $\sigma = 1.02$) of career exploration SAEs.

Table 1

Teacher Perceptions of Career Exploration SAEs

Item	*n*	SD	D	N	A	SA	$\bar{x}$	σ
I encourage all students to have an SAE program	122	0	4	16	49	53	4.24	0.80
I like providing students with career exploration opportunities	123	1	0	4	51	67	4.49	0.65
I am confident in my ability to facilitate career exploration opportunities	123	1	2	12	60	48	4.24	0.76
Career exploration is a rigorous SAE	121	3	23	41	40	14	3.32	0.99
Career exploration is a relevant SAE	120	2	14	17	53	34	3.86	1.02

Note. Strongly disagree (SD) = 1; disagree (D) = 2; neutral (N) = 3; agree (A) = 4; strongly agree (SA) = 5

Table 2 examines the expectations teachers perceive are placed on them by stakeholders and students. Overall, teachers indicate program stakeholders such as administrators, advisory board members, and the community view career exploration SAE activities as more important ($\bar{x} = 4.19$; $\sigma = 0.83$) than students do ($\bar{x} = 3.56$; $\sigma = 1.08$).

Table 2
Teacher Subjective Norms Regarding Career Exploration SAEs

Item	*n*	SD	D	N	A	SA	$\bar{x}$	σ
Program stakeholders view career career exploration as important.	122	1	1	23	46	51	4.19	0.83
My students view career exploration as important.	121	4	18	30	44	25	3.56	1.08

Note. Strongly disagree (SD) = 1; disagree (D) = 2; neutral (N) = 3; agree (A) = 4; strongly agree (SA) = 5

Objective 2 assessed agricultural educators' perceptions of career exploration SAE activities based on grade levels. The majority of respondents (*n* = 81; 65.9%) reported their programs begin in 7th or 8th grade, yet very few (*n* = 17; 16.4%) introduce students to SAE at that age; the majority of educators wait until students are freshmen (*n* = 49; 39.8%) or sophomores (*n* = 53; 43.1%) to do so. Further, Table 3 indicates teachers' perceived importance of providing students with career exploration-focused SAE opportunities increases as students get older.

Table 3
Perceived Importance of Career Exploration SAE Activities Based on Grade Level

Item	*n*	VU	U	N	I	VI	$\bar{x}$	σ
Grades 7 and 8	123	5	9	37	47	25	3.63	1.02
Grades 9 and 10	123	2	5	9	57	50	4.20	0.87
Grades 11 and 12	122	3	1	8	39	71	4.43	0.85

Note. Very unimportant (VU) = 1; unimportant (U) = 2; neutral (N) = 3; important (I) = 4; very important (VI) = 5

Objective 3 identified types of SAE career exploration activities educators utilize within their programs. Respondents reported most frequently utilizing guest speakers (*n* = 113; 91.9%) and agribusiness tours (*n* = 107; 87.0%) to engage students in career exploration SAEs. Table 4 provides a complete summary of the frequencies of these types of activities.

Table 4
Types and Frequencies of Career Exploration SAE Activities

Item	*n*	Yes		No	
		f	%	*f*	%
Job shadowing	123	77	62.6%	46	37.4%
Career inventories	123	101	82.1%	22	17.9%
Guest speakers	123	113	91.9%	10	8.1%
Agribusiness tours	123	107	87.0%	16	13.0%

Conclusions and Recommendations

Conclusions: Objectives 1 and 2

Objectives 1 and 2 aimed to assess agricultural educators' perceptions related to implementing SAE career exploration activities within their agricultural education programs in general, and in relation to specific grade levels. Overall, teachers tend to enjoy providing SAE opportunities to their students, especially related to career exploration. However, despite the literature indicating

strong support of SAE improving both academic and social skills for students (Haddad & Marx, 2018; Mouser et al., 2019; Toombs et al., 2022), some question the rigor and relevance of career exploration-focused SAE opportunities. With the continuing trend of an agricultural labor shortage (Hill et al., 2021), agricultural educators likely feel the increased desire of stakeholders wishing for additional career exploration activities within their programs as a key subjective norm (Ajzen, 1991). Despite middle school being an opportunity for students to engage in foundational SAEs such as career exploration since many are still too young to obtain employment or engage in an immersion SAE, teachers place greater importance on career exploration SAEs for upperclassmen. This may be attributed to older students being closer to graduating. At the same time, it is important to recognize that middle school career exploration activities can increase interest in agricultural opportunities students can pursue in high school, so there is value in still prioritizing these SAEs at the middle school level (Eck & Davis, 2024).

Conclusions: Objective 3

Objective 3 identified types of SAE career exploration activities educators utilize within their programs. Teachers tend to utilize guest speakers and agribusiness tours most commonly as career exploration SAE activities. Coupled with reflection opportunities (Retallick, 2010), these can lead to additional learning and self-discovery of interests that could evolve into an immersion SAE. Further, this additional visibility within the community, and students having the opportunity to network with agricultural professionals through these career exploration activities could ultimately influence the subjective norms teachers perceive from students and stakeholders (Ajzen, 1991) as additional career exploration experiences are offered, since students and stakeholders may begin to expect these interactions. As these networks are established, this may also influence teachers' beliefs about career exploration (attitude) and their own confidence in facilitating these experiences (perceived behavioral control) (Ajzen, 1991).

Recommendations

Future research should aim to address the limitations of this pilot study, including our small sample size and only using a limited set of questions. Since the study was conducted at the start of a teacher professional development workshop, we wanted to utilize a shorter instrument to minimize attrition and maximize workshop engagement time. Further, additional research could be conducted with students at all grade levels to better assess their attitudes toward career exploration SAE programs. This could then be utilized to develop or refine SAE for All resources educators could use to engage students in age-appropriate career exploration activities.

For professional practice, additional professional development and training facilitated by the National Council for Agricultural Education can assist educators in understanding how to implement career exploration SAEs within their programs (Hainline & Smalley, 2023). Since SAE for All is still relatively new and adoption has been prolonged (Eck & Davis, 2024; Hainline & Smalley, 2023), training may increase educators' perceived behavioral control and improve their attitudes toward facilitating career exploration activities at all grade levels (Ajzen, 1991). Further, we recommend collaborating with National FFA and the National Council for Agricultural Education to develop a toolkit of resources specifically related to career exploration components of SAE for All to alleviate barriers or apprehension toward these activities, and perhaps increase the perceived rigor and relevance of these activities among teachers.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211.

Creswell, J. D., & Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.

Croom, D. B. (2008). The development of the integrated three-component model of agricultural education. *Journal of Agricultural Education, 49*(1), 110–120. https://doi.org/10.5032/jae.2008.01110

Eck, C., & Davis, R. (2024). Identifying the perceptions, barriers, and implementation of middle school supervised agricultural experiences. *Journal of Agricultural Education, 65*(1), 126–139. https://doi.org/10.5032/jae.v65i1.158

Frankfort-Nachmias, C., Leon-Guerrero, A., & Davis, G. (2021). *Social statistics for a diverse society* (9th ed.). SAGE Publications.

Haddad, B., & Marx, A. A. (2018). Student perceptions of soft skills & career decision self-efficacy through participation in SAE. *Journal of Agricultural Education, 59*(4), 159–176. https://doi.org/10.5032/jae.2018.04159

Hainline, M., & Smalley, S. (2023). Determining the professional development needs of Iowa school-based agricultural education teachers related to program design, leadership, and SAE development. *Journal of Agricultural Education, 64*(1), 1–10. https://doi.org/10.5032/jae.v64i1.26

Hill, A. E., Ornelas, I., & Taylor, J. E. (2021). Agricultural labor supply. *Annual Review of Resource Economics, 13*(1), 39–64. https://doi.org/10.1146/annurev-resource-101620-080426

Mouser, D. M., Sheng, Z., & Thoron, A. C. (2019). Are agriculture students more career ready? A comparative analysis of Illinois juniors. *Journal of Agricultural Education, 60*(2), 15–27. https://doi.org/10.5032/jae.2019.02015

National Council for Agricultural Education. (2015). *Philosophy and guiding principles for execution of the supervised agricultural experience component of the total school based agricultural education program*. https://ffa.app.box.com/s/i8ntesw8zsajaxxdnj5cle6zaf0a6za3

Rank, B. D., & Retallick, M. S. (2017). Supervised agricultural experience instruction in agricultural teacher education programs: A national descriptive study. *Journal of Agricultural Education, 58*(2), 143–169. https://doi.org/10.5032/jae.2017.02143

Retallick, M. S. (2010). Implementation of supervised agricultural experience programs: The agriculture teachers' perspective. *Journal of Agricultural Education, 51*(4), 59–70. https://doi.org/10.5032/jae.2010.04059

Rubenstein, E. D., Thoron, A. C., Colclasure, B. C., & Gordon, J. A. (2016). Supervised agricultural experience programs: An examination of the development and implementation of urban programs. *Journal of Agricultural Education, 57*(4), 217–233. https://doi.org/10.5032/jae.2016.04217

Sakshaug, J. W., Vicari, B., & Couper, M. P. (2019). Paper, e-mail, or both? Effects of contact mode on participation in a web survey of establishments. *Social Science Computer Review*, *37*(6), 750-765. https://doi.org/10.1177/0894439318805160

Sansom, R. (2021). *Theory of planned behavior*. https://ascnhighered.org/ASCN/change_theories/collection/planned_behavior.html

Smith, K. L., & Rayfield, J. (2016). An early historical examination of the educational intent of supervised agricultural experiences (SAEs) and project-based learning in agricultural education. *Journal of Agricultural Education, 57*(2), 146–160. https://doi.org/10.5032/jae.2016.02146

Thyer, B. A. (2010). *The handbook of social work research methods* (2nd ed.). SAGE Publications.

Toombs, J. M., Eck, C. J., & Robinson, J. S. (2022). The impact of a project-based learning experience on the SAE self-efficacy of preservice teachers. *Journal of Agricultural Education, 63*(1), 29–46. https://doi.org/10.5032/jae.2022.01029

USDA Economic Research Service. (2024, February 14). *Chart detail*. USDA ERS. https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=58282