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State Wide Self-Assessment of General Program Standards for Agricultural Education

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Keywords
self-assessment, program standards

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Abstract

A quality program is the ultimate goal for many secondary agricultural education programs. To ensure quality agricultural education programs, standards were established to measure the extent agricultural education programs in Iowa were implementing standards. Utilizing Ajzen's Theory of Planned Behavior, researchers incorporated the Iowa Council on Agricultural Education standards as an evaluation tool. A census study was conducted in Iowa with high school agricultural education teachers (N = 255) to better understand the extent that standards outlined by the Iowa Council on Agricultural Education were being met in agricultural education programs. In the general program standard area, improvement is needed in the areas of utilization of stakeholders, program planning, and administration communication. The FFA standard area only had one standard not being met or exceeded while Supervised Agricultural Experience (SAE) standard area had all standards indicated being met or exceeded.

Keywords: self-assessment; program standards

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Introduction

Career Technical Education (CTE) helps prepare students for success in future education and careers, as a means to help the United States maintain its precedence in global competitiveness ("Investing in Students," 2013). "The purpose of CTE is to develop the knowledge and skills required for successful employment in a given industry" (Roberts & Ball, 2009 p. 82). CTE is driven by the needs of the workplace (Pearson, Young, & Richardson, 2013), and in Iowa, CTE includes organized educational programs that offer a sequence of courses, which are directly related to the preparation of individuals for employment regarding current or emerging occupations ("Career and Technical Education," 2017). These programs continue to adapt and evolve as workforce demands adjust (Pearson et al., 2013).

Aligning with CTE, agriculture continues to adjust to meet demands (Dotson, 2007). Many Americans are now at least three generations removed from agriculture (Dotson, 2007). With the changes in agriculture, the need for agricultural education programs has become more

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important. Agricultural education only reaches about 4% of American high school students (Womochil, 2007). Formal agricultural education programs are often thought of as the primary source for providing knowledge regarding the agricultural industry to students, as many schools across the country offer agricultural education programs (Etling, 1993; "The National FFA," 2016). These programs allow high school students to be introduced to agricultural practices and information and are taken by students with and without an agricultural background. Standards were established to ensure each agricultural education program is meeting program goals and objectives.

In 2009, the National Council for Agricultural Education (2015c) created National Quality Program Standards (NQPS) for Agriculture, Food, and Natural Resources (AFNR) education. The standards were designed to assist educational programs in analyzing and developing clear goals and objectives for program growth (NCAE, 2015a). These standards focused on relevant instruction, rigorous clear goals, continuous program improvement, and development of essential skills for student success (NCAE, 2015a). In addition to program standards, Supervised Agricultural Experience (SAE) and the National FFA Organization (FFA) were highlighted as Agricultural Education program areas.

Supervised Agricultural Experience (SAE) is required for teachers and students in an agricultural education program (NCAE, 2015a). SAE provides students with the opportunity to apply what they learned in the classroom to an experiential learning activity outside the formal instruction (NCAE, 2015b). Through the SAE program, the teacher provides supervision and guidance via on-site instruction, or other methods including computer technology, reports, or group meetings (NCAE, 2015b). With experiential learning, students engage in a SAE program that provides the opportunity to experience various careers and occupations, develop and practice skills necessary for the industry, and prepare for college and/or careers. The SAE project should be related to students' career exploration, classroom instruction, and agriculture, food, and natural resources (NCAE, 2015b).

The National Council for Agricultural Education (2017) created a SAE roadmap defining the different levels of involvement depending on the student's year in the agricultural program. There is the foundational level where each student will start an SAE project. The SAE project can provide experiences in the following: "career exploration and planning, employability skills for college and career readiness, personal financial management and planning, workplace safety, and agricultural literacy" (NCAE, 2017, p. 6). Starting at this level allows students to explore several areas of interest creating the opportunity for the student to become immersed in a specific area (NCAE, 2017). Once a student is immersed in a specific area, there are five options to create a real-world experience for a SAE project which include: "placement/internship, ownership/entrepreneurship, research: experimental, analysis or invention, school-based enterprise, and service learning" (NCAE, 2017, p. 7). "SAE, as well as FFA and in-class instruction, are necessities for a quality agriculture program" (Steele, 1997, p. 55).

The National FFA Organization is a youth organization that strives to, "make a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education" ("The National FFA," 2015, para. 1). FFA is structured at the community level with a local chapter, at the state level with a state association, and at the national level with the National FFA Organization ("The National FFA," n.d.). With the organization's structure, students can be involved in many leadership opportunities, experience hands-on learning, and gain real-world skills necessary for college and future careers ("The National FFA," 2016). Today, FFA extends throughout the United States, Puerto Rico, and the U.S. Virgin Islands ("The National FFA," 2016). With various programs

across the country, it is important that standards are established in order to develop quality programs.

In education, content areas are established to help specify the knowledge and skills in a given area. Content areas can vary from state to state; however, the common areas include literacy, mathematics, and science ("Explore Iowa core," n.d.). With the variation in content, standards have been established for each content area to ensure students are literate, global citizens that are ready for future college or career success (Kober & Rentner, 2011; "Science," n.d). The National Governors Association and the Council of Chief State School Officers in collaboration with teachers, school personnel, and experts published the Common Core State Standards (CCSS) for grades K-12 in 2012 (Kober & Rentner, 2011). These standards were intended to be of high-quality (Conley, 2014) and to establish an equivalent set of expectations for students from state to state (Kober & Rentner, 2011).

The AFNR career cluster standards are similar to the CCSS standards as they each have increasing expectations as the students' grade level increases (NCAE, 2015c; Iowa Department of Education, 2017). The difference between the CCSS standards and the AFNR standards is that the AFNR standards have three levels to each standard (NCAE, 2015c). The first level is common career technical core standards where the student should be able complete and be knowledgeable about certain topic areas (NCAE, 2015c). Performance indicators are indicators used to test the knowledge and the skills students should have learned throughout the lesson (NCAE, 2015c). The last level is sample measures which are examples of different measurable activities students should be able complete after instruction in the content area (NCAE, 2015c). Within the sample measure section, there are three different proficiency levels which include: awareness, intermediate, and advanced (NCAE, 2015c).

High-quality programs include supporting both teaching and learning (Haworth & Conrad, 1997). "Quality teaching transforms students' perceptions of their world, and the way they go about applying their knowledge to real world problems; additionally, it also transforms teachers' conceptions of their role as a teacher, and the culture of the institution" (Biggs, 2001, p. 222). These programs enhance learning experiences to positively influence growth and development (Haworth & Conrad, 1997).

Agricultural education programs across the United States have utilized standards to ensure programs are of high-quality. Quality agricultural education programs meet the national program standards (Jenkins & Kitchel, 2009). The Standards for Quality Vocational Programs in Agricultural/Agribusiness Education first identified the need to develop a national standards project in the 1970s. The organization identified program and content standards for agricultural education programs, as well as standards for state staff, teacher education, and adult education (Jenkins & Kitchel, 2009). Following the national project, many states developed their own quality standards to improve or measure the quality of its agriculture programs (Camp & Crunckilton, 1985); however, those standards were often self-administered, voluntary, and differed from state to state (Jenkins & Kitchel, 2009).

The Iowa Council on Agricultural Education most recently revised the standards for agricultural education in 2001. Programs need to be assessed in order to ensure quality agricultural education programs within the state. In order to ensure quality programs remain, an assessment to identify the extent to which agricultural education programs in Iowa are implementing the standards established by the council is needed. While designed to be used locally by teachers and advisory councils, there is a need to know if teachers believe they are meeting the standards to assist with professional development.

Agricultural education programs can better serve their students by identifying standards and the extent to which the programs achieve the standards. This study contributes to the 2016-2020 National Research Agenda's Priority Area 4: Meaningful, Engaged Learning in all Environments. The national research agenda states, "Effective teaching has continually been hampered by pedagogical constraints such as time, materials, and ever changing technological advances. There are various interpretations on how best to incorporate educational practices to better educate learners" (Roberts, Harder, & Brashears, 2016, p. 38).

Theoretical Framework

The theoretical framework used for this research was Ajzen's (1991) Theory of Planned Behavior (TPB) (Figure 1). TPB is a "theory designed to predict and explain human behavior in a specific context" (Ajzen, 1991, p. 181). Within the theory of planned behavior, there are three concepts: attitudes, subjective norms, and perceived behavioral control. All the concepts funnel to intention and then to behavior (Ajzen, 1991). Attitude is a notion that involves behavior and identifies the extent to which a person agrees or disagrees with the behavior (Ajzen, 1991). In line with an attitude towards a behavior, subjective norm is described as a person's perception and assumptions of specific behaviors (Pavlou & Fygenson, 2006). The third component in TPB is perceived behavioral control, which is defined as how easily the behavior can be performed after reflecting on previous experiences and awaiting the obstacles ahead (Ajzen, 1991). The three components join to form intention. Intention is the attempt to achieve a given behavior based on motivation. The greater the motivation, the higher intention to perform the behavior (Ajzen, 1991).

In this study, attitudes, subjective norms, and perceived behavioral control all took part in the educator's process of evaluating their program. In order for educators to evaluate their programs, they first needed to reflect on their agriculture program. Without these three components, educators' motivation would not lead to their intention, which would not contribute to a desired behavior that would result in programs not meeting or exceeding expectations.

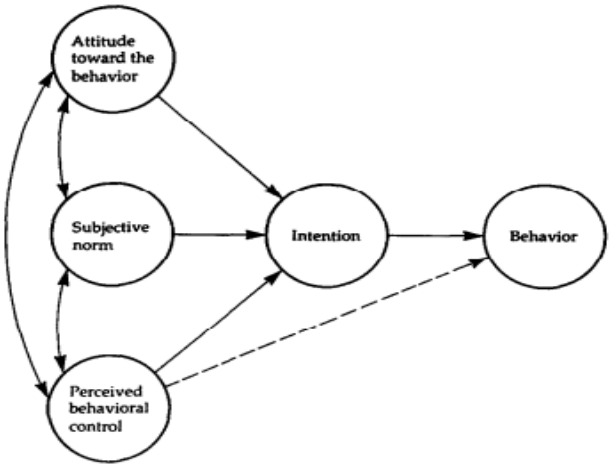

Figure 1. Theory of Planned Behavior Model (Ajzen, 1991).

Purpose

The purpose of this study was to determine the extent to which Iowa agricultural education programs are collectively meeting the Iowa standards. Specific objectives include:

1. Identify the extent the general program standards are being met.
2. Identify the extent the standards for FFA chapter activities are being met.
3. Identify the extent the career experience programs in agriculture (SAE) are being met.

Methods/Procedures

The population for this study was all high school agricultural education teachers in Iowa ($N = 255$), which were identified using the Iowa FFA Association teacher directory. This census study was selected to better understand the extent to which standards outlined by the Iowa Council on Agricultural Education were being met. The instrument used in this study followed the Iowa Council on Agricultural Education standards as created in 1991 and revised in 2000 (Guidelines, 2001). Within the self-reported survey, three agricultural education program standard areas were assessed: (1) General program standards for agricultural education which contained 45 standards; (2) standards for FFA chapter activities in agricultural education that contained 27 standards; and (3) supervised agriculture experience in agriculture that contained 17 standards. This study was reviewed by the Institutional Review Board (IRB) application and deemed exempt. A five-point Likert-type scale was used (i.e. 1=nonexistent; 2=does not meet standard; 3=program needs work to meet standard; 4=program meets standard; and 5=program exceeds the standard). Researchers did not provide definitions for the scale as teachers were self-reporting the extent to which they thought their program was performing compared to the standards. The Governor's Council on Agriculture Education standards document included the Likert-type scale (Guidelines, 2001). The survey instrument was reviewed by a panel of experts for face and content validity.

Dillman, Smyth, and Christian's (2009) tailored design method was used to develop the electronic survey instrument and the data collection procedures. A personalized email with the link to the survey was sent to all agricultural teachers in Iowa through Qualtrics in May before school was let out, and three reminder emails were sent to nonrespondents during a three-week period. The usable response rate was 81.42% ($n = 206$) and the total response rate was 85.38% ($n = 216$). Nonusable responses were partially completed surveys and were disregarded. To address nonresponse error, early and late responses were compared (Linder, Murphy, & Briers, 2001) and no statistically significant differences were found. Data were analyzed using descriptive statistics and results were reported in table form. The standards were ranked in order from highest to lowest frequencies and displayed in figures.

Results/Findings

Respondents in the study had varied amounts of teaching experience ranging from only one year to more than 31 years. The largest percentage of the teachers were teaching from one to five years (37.38%). A majority of the respondents said their highest degree earned was a bachelor's degree (67.14%). Demographic characteristics of the respondents were collected (Table 1).

Table 1

Summary of Respondents' Selected Demographic Characteristics ($n = 206$)

	f	%
Years teaching		

1-5 years	80	37.38
6-10 years	39	18.22
11-15 years	23	10.75
16-20 years	19	8.88
21-25 years	14	6.54
25-30 years	10	4.67
More than 31 years	29	13.55
Highest degree earned		
Bachelors	143	67.14
Masters	68	31.92
PhD	2	0.94
Gender		
Male	111	52.11
Female	102	47.89
Teacher program		
Single	182	85.45
Multiple	31	14.55
CASE certified teacher		
Yes	142	66.36
No	72	33.64
Number of students seen on a daily basis		
0-50	54	25.23
51-100	124	57.94
101-150	29	13.55
151-200	6	2.80
201-250	1	0.47
251-300	0	0.00
Percentage of students in FFA		
0-20%	18	8.41
21-40%	19	8.88
41-60%	45	21.03
61-80%	52	24.30
81-100%	80	37.38
Percentage of students with an SAE		
0-20%	26	12.21
21-40%	20	9.39
41-60%	45	21.13
61-80%	52	24.41
81-100%	70	32.86

Note: Valid percentage is reported for each demographic characteristic.

The general program standard area included 47 standards and nearly all programs reported meeting or exceeding expectations (Table 2 and Figure 2). The standard area programs were: *needed work, did not met the standard, or were nonexistent*. Standards not *needing work, did not meet the standard, or were nonexistent* were organized into three categories including: (1) stakeholders (e.g. advising, alumni, and community); (2) program planning (e.g. philosophy,

summer planning, annual reports, record keeping, and individualized instruction); and (3) administration (e.g. support, funding, extended contracts, facilities, and land labs).

Table 2

General Program Standards for Agricultural Education

		Non-existent		Does not meet standard		Program needs work to meet standard		Program meets standard		Program exceeds the standard			
	n	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*M*	*SD*
All agricultural education students are given the opportunity to be members of FFA.	207	1	0.48	0	0.00	0	0.00	104	50.24	102	49.28	**3.48**	0.56
Members of the FFA Chapter are given the opportunity and encouraged to be involved in FFA activities at all levels – local, district, state, national and international experiences.	207	0	0.00	1	0.48	1	0.48	108	52.17	97	46.86	**3.45**	0.54
Professionally trained and licensed teacher employed.	206	0	0.00	0	0.00	1	0.49	121	58.74	84	40.78	**3.40**	0.50
Educational experience provided thru use of classroom, lab and field experiences.	208	1	0.48	0	0.00	16	7.69	122	58.65	69	33.17	**3.24**	0.63
School approved transportation provided.	207	2	0.97	0	0.00	7	3.38	139	67.15	59	28.50	**3.22**	0.60
Science, math and communication knowledge and skills are integrated into the agricultural curriculum.	206	0	0.00	3	1.46	7	3.40	143	69.42	53	25.73	**3.19**	0.56
Safety instruction given prior to and during all laboratory and field experience.	207	0	0.00	1	0.48	8	3.86	150	72.46	48	23.19	**3.18**	0.51
Provisions made for students with special needs.	207	0	0.00	1	0.48	8	3.86	156	75.36	42	20.29	**3.15**	0.49
Leadership and personal development activities are an integral part of Agricultural Education program.	207	0	0.00	1	0.48	22	10.63	133	64.25	51	24.64	**3.13**	0.60
Teacher develops and follows a daily plan for instruction.	206	0	0.00	1	0.49	21	10.19	143	69.42	41	19.90	**3.09**	0.56

Table 2

General Program Standards for Agricultural Education continued

Provisions are made in program for individual student differences	205	0	0.00	1	0.49	26	12.68	148	72.20	30	14.63	**3.01**	.054
Instructor involved in in-service agricultural education programs (district meetings, summer conference and professional development program.	206	1	0.49	4	1.94	27	13.11	136	66.02	38	18.45	**3.00**	0.66
Instructor active member in professional educational organizations.	205	2	0.98	6	2.93	25	12.20	131	63.90	41	20.00	**2.99**	0.73
Up-to-date instructional and reference materials used.	207	2	0.97	3	1.45	26	12.56	141	68.12	35	16.91	**2.99**	0.66
Current state and federal safety regulations met.	206	1	0.49	4	1.94	15	7.28	165	80.10	21	10.19	**2.98**	0.54
Enrollment policies permit flexible entry and exit.	205	1	0.49	5	2.44	31	15.12	137	66.83	31	15.12	**2.94**	0.66
Instructor provides supervision for experience programs.	207	2	0.97	2	0.97	32	15.46	144	69.57	27	13.04	**2.93**	0.64
Departmental office provided with phone, computer network, e-mail and internet near classroom/lab.	206	11	5.34	12	5.83	11	5.34	123	59.71	49	23.79	**2.91**	1.00
Experiential learning program provides desired special experiences.	205	1	0.49	4	1.95	33	16.10	143	69.76	24	11.71	**2.90**	0.63
Program uses community field trips to relate instruction to the real world of agriculture.	208	4	1.92	4	1.92	41	19.71	127	61.06	32	15.38	**2.86**	0.76
Instructor active in local civic organizations.	204	4	1.96	7	3.43	37	18.14	122	59.80	34	16.67	**2.86**	0.80
Cooperative working relationship developed with community leaders and advisory committee.	206	6	2.91	3	1.46	38	18.45	128	62.14	31	15.05	**2.85**	0.80
Program uses guest speakers representing various segments of agriculture.	207	2	0.97	7	3.38	47	22.71	118	57.00	33	15.94	**2.84**	0.76

Table 2

General Program Standards for Agricultural Education Continued

Competencies used as a guide for instruction. Department uses localized standards, benchmarks and minimum state validated performance indicators as a guide for planning for instruction.	208	5	2.40	6	2.88	34	16.35	138	66.35	25	12.02	**2.83**	0.77
Instructional program articulated with other educational programs e.g. within school; post-secondary.	207	6	2.90	3	1.45	38	18.36	134	64.73	26	12.56	**2.83**	0.78
Up-to-date curriculum guide is available.	208	6	2.88	3	1.44	43	20.67	134	64.42	22	10.58	**2.78**	0.77
Current journals and agricultural publications available.	207	7	3.38	10	4.83	39	18.84	117	56.52	34	16.43	**2.78**	0.90
On-going public relations program conducted.	206	4	1.94	6	2.91	49	23.79	120	58.25	27	13.11	**2.78**	0.78
An uninterrupted preparation period (not including travel and lunch) is provided the teacher.	207	7	3.38	17	8.21	26	12.56	125	60.39	32	15.46	**2.76**	0.93
Adequate financial support provided as determined by local need.	206	2	0.97	14	6.80	38	18.45	132	64.08	20	9.71	**2.75**	0.76
Job description developed for instructor.	206	6	2.91	19	9.22	52	25.24	115	55.83	14	6.80	**2.54**	0.86
Advisory committee meets at least twice a year, one meeting focused on evaluation.	208	11	5.29	22	10.58	56	26.92	89	42.79	30	14.42	**2.50**	1.04
Students engaged in SAE programs that match career goals.	207	3	1.45	12	5.80	82	39.61	103	49.76	7	3.38	**2.48**	0.72
Instructor and school administrators meet annually to formally review program.	206	8	3.88	24	11.65	53	25.73	106	51.46	15	7.28	**2.47**	0.93
SAE experience programs are recorded to gauge progress. Students keep accurate and complete SAE records of experience that indicates growth and progress.	207	3	1.45	12	5.80	93	44.93	86	41.55	13	6.28	**2.45**	0.76

Table 2

General Program Standards for Agricultural Education Continued

Adequate facilities and horticulture equipment and storage space provided as determined by local need and meets components of quality.	206	18	8.74	27	13.11	44	21.36	92	44.66	25	12.14	**2.38**	1.13
Community data and issues used to modify instructional plan.	207	15	7.25	17	8.21	60	28.99	106	51.21	9	4.35	**2.37**	0.96
Annual report of SAE/FFA and other programs prepared and presented to local school authorities	206	12	5.83	21	10.19	71	34.47	92	44.66	10	4.85	**2.33**	0.93
Active advisory committee has written operational procedures.	206	16	7.77	20	9.71	67	32.52	89	43.20	14	6.80	**2.32**	1.01
Instructor visits prospective students and their parents/guardians.	206	11	5.34	28	13.59	72	34.95	85	41.26	10	4.85	**2.27**	0.94
Statement of philosophy written for department.	208	26	12.5	14	6.73	68	32.69	95	45.67	5	2.40	**2.19**	1.04
Department has planned summer program on file.	205	19	9.27	22	10.73	83	40.49	67	32.68	14	6.83	**2.17**	1.03
Minimum of one supervisory SAE contract made per student per year.	206	10	4.85	30	14.56	92	44.66	65	31.55	9	4.37	**2.16**	0.90
Instructor employed on full-time program holds a 60-day or standard minimum of 40-day contract beyond standard 180-day contract.	206	19	9.22	70	33.98	28	13.59	62	30.10	27	13.11	**2.04**	1.24
Land laboratory provided and used in program as determined by local need.	206	60	29.13	17	8.25	22	10.68	80	38.83	27	13.11	**1.99**	1.47
File maintained for each student enrolled and chart progress.	205	16	7.80	38	18.54	98	47.80	49	23.90	4	1.95	**1.94**	0.90
Program uses FFA Alumni to assist in the instructional program.	208	52	25.00	17	8.17	58	27.88	67	32.21	14	6.73	**1.88**	1.29

Note: Item mean is shown in boldface. Scale: 1 = Nonexistent, 2 = Does not meet standard, 3 = Program needs work to meet standard, 4 = Program meets the standard, 5 = Program exceeds the standard.

Figure 2. State Wide Self-Assessment of General Program Standards for Agricultural Education.

The standards for FFA chapter activities in agricultural education are displayed in Table 3 and Figure 3. When analyzing the standards for FFA chapter activities in agricultural education, areas associated with written reports and stakeholders were identified as *needing work, not meeting the standard, or nonexistent*. Twenty-six out of the 27 standards in the FFA area *met or*

exceeded the standards. The standard not *met or exceeded* in programs was teachers not developing an annual report of activities and then presenting that report to their advisory council.

Table 3

Standards for FFA Chapter Activities in Agricultural Education

		Non-existent		Does not meet standard		Program needs work to meet standard		Program meets standard		Program exceeds the standard			
	n	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*M*	*SD*
All students have the opportunity to be members: membership is open to all regardless of race, religion, gender, and national origin.	206	0	0.00	0	0.00	4	1.94	111	53.88	91	44.17	**3.42**	0.53
Chapter has a complete set of officers	206	0	0.00	2	0.97	2	0.97	119	57.77	83	40.29	**3.37**	0.56
Chapter follows all state and national association guidelines to be fully recognized as an active chapter.	206	0	0.00	0	0.00	3	1.46	134	65.05	69	33.50	**3.32**	0.50
Chapter recognizes achievement by individual members and/or groups of members via a systematic awards program during an Annual-Parent-Member Banquet.	206	0	0.00	1	0.49	11	5.34	124	60.19	70	33.98	**3.28**	0.58
FFA Chapter participants in a variety of activities: local, sub-district, district, state, national and international.	206	0	0.00	1	0.49	12	5.83	125	60.68	68	33.01	**3.26**	0.58
Chapter activities are publicized via available media.	206	1	0.49	0	0.00	19	9.22	122	59.22	64	31.07	**3.20**	0.64
Each student in the FFA is enrolled in agricultural education courses or has recently completed a full curriculum in agricultural education.	206	0	0.00	1	0.49	16	7.77	138	66.99	51	24.76	**3.16**	0.57
Chapter participates in career development and other competitive events that relate to and supports the curriculum.	203	0	0.00	1	0.49	15	7.39	142	69.95	45	22.17	**3.14**	0.55

Table 3

Standards for FFA Chapter Activities in Agricultural Education Continued

All materials necessary to conduct FFA Chapter activities are available to members…i.e. - handbooks, manuals, paraphernalia.	204	0	0.00	2	0.98	10	4.90	150	73.53	42	20.59	**3.14**	0.53
FFA activities are intra-curricular and there is evidence that FFA is tied to the curriculum.	206	0	0.00	2	0.97	19	9.22	137	66.50	48	23.30	**3.12**	0.59
There is a systematic plan to teach cooperation, citizenship, and leadership skills via the FFA.	205	2	0.98	1	0.49	18	8.78	135	65.85	49	23.90	**3.11**	0.65
Chapter members follow the FFA Code of Ethics, State Harassment Policy, and local eligibility policy and other local behavior and participation policies.	204	0	0.00	1	0.49	15	7.35	152	74.51	36	17.65	**3.09**	0.51
Chapter activities enhance the instructional program.	204	0	0.00	1	0.49	16	7.84	152	74.51	35	17.16	**3.08**	0.51
Chapter develops an annual program of activities, which is printed and distributed to the membership.	206	0	0.00	1	0.49	28	13.59	133	64.56	44	21.36	**3.07**	0.61
FFA chapter is a highly recognized organization in the school district.	203	0	0.00	4	1.97	33	16.26	118	58.13	48	23.65	**3.03**	0.69
Chapter cooperates with other organizations in the school and community.	204	1	0.49	2	0.98	25	12.25	141	69.12	35	17.16	**3.01**	0.62
Chapter develops and follows a systematic plan for financing chapter activities.	204	0	0.00	1	0.49	24	11.76	150	73.53	29	14.22	**3.01**	0.53
Chapter participates in and conducts a community development project.	206	0	0.00	3	1.46	37	17.96	123	59.71	43	20.87	**3.00**	0.67
Chapter participation in personal development and leadership development activities, workshops and conferences.	203	1	0.49	3	1.48	24	11.82	144	70.94	31	15.27	**2.99**	0.61

Table 3

Standards for FFA Chapter Activities in Agricultural Education Continued

Community resources are utilized to further chapter goals and provide a sense of "community" to members.	203	0	0.00	1	0.49	29	14.29	145	71.43	28	13.79	**2.99**	0.55
FFA chapter is assisted by FFA supporters and/or alumni in the community.	204	5	2.45	2	0.98	27	13.24	131	64.22	39	19.12	**2.97**	0.76
Chapter develops and operates the chapter activities based on an annual budget approved by its members.	204	0	0.00	3	1.47	31	15.20	147	72.06	23	11.27	**2.93**	0.57
Chapter has a standing committee in each of the three divisions or 15 program areas.	206	1	0.49	5	2.43	41	19.90	127	61.65	32	15.53	**2.89**	0.70
Chapter conducts agricultural literacy/awareness programs in community	204	4	1.96	4	1.96	42	20.59	128	62.75	26	12.75	**2.82**	0.75
Chapter conducts a planned membership recruitment retention program.	202	2	0.99	5	2.48	52	25.74	119	58.91	24	11.88	**2.78**	0.72
Chapter has 12 regularly scheduled meetings in which organizational official business is conducted and official ceremonies.	206	1	0.49	13	6.31	65	31.55	103	50.00	24	11.65	**2.66**	0.78
School Administrators are involved in FFA activities.	204	9	4.41	13	6.37	51	25.00	109	53.43	22	10.78	**2.60**	0.92
A full annual report of FFA activities is presented to the advisory committee and school administrators.	204	7	3.43	17	8.33	78	38.24	88	43.14	14	6.86	**2.42**	0.87

Note. Item mean is shown in boldface. Scale: 1 = Nonexistent, 2 = Does not meet standard, 3 = Program needs work to meet standard, 4 = Program meets the standard, 5 = Program exceeds the standard.

Figure 3. Standards for FFA Chapter Activities in Agricultural Education.

Responses to the standards for Supervised Agricultural Experience (SAE) are represented (Table 4 and Figure 4). Of the standards in the SAE area, 12 of the 17 were *met or exceeded* by more than 50% of the programs in Iowa. Developing a plan, record keeping, supervision, and local programs assessment of SAE and advisory were determined as *needing work, not meeting the standard, or nonexistent*.

Table 4

Standards for Supervised Agricultural Experience (SAE)

		Nonexistent		Does not meet standard		Program needs work to meet standard		Program meets Standard		Program exceeds the Standard			
	n	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*M*	*SD*
Program provides SAE and instruction about SAE as an effective teaching/learning approach.	206	1	0.49	2	0.97	44	21.36	138	66.99	21	10.19	**2.85**	0.62
SAE is utilized in classroom instructional program.	206	2	0.97	6	2.91	44	21.36	133	64.56	21	10.19	**2.80**	0.69
SAE activities provide for small group and individualized instruction.	206	5	2.43	8	3.88	50	24.27	125	60.68	18	8.74	**2.69**	0.78
SAE provides opportunity for starting a business, developing and using entrepreneurship skills.	205	3	1.46	7	3.41	52	25.37	133	64.88	10	4.88	**2.68**	0.69
Students apply for awards programs in FFA based on SAE program.	206	4	1.94	9	4.37	61	29.61	115	55.83	17	8.25	**2.64**	0.78
Student-centered learning in the SAE program is developed by listing skills and knowledge/ competencies to be learned in the experience.	206	2	0.97	9	4.37	64	31.07	122	59.22	9	4.37	**2.62**	0.69
SAE activities and student progress are evaluated on an on-going basis.	205	3	1.46	8	3.90	67	32.68	116	56.59	11	5.37	**2.60**	0.72
SAE programs are characterized by the growth and expansion of experiences.	206	3	1.46	12	5.83	62	30.10	119	57.77	10	4.85	**2.59**	0.74
Program identifies and documents competencies learned and practiced in SAE programs by keeping complete and accurate records.	204	2	0.98	11	5.39	83	40.69	99	48.53	9	4.41	**2.50**	0.71

Table 4

Standards for Supervised Agricultural Experience (SAE)

SAE program activities are reported in summary form to the appropriate local and state leaders in agricultural education. Annual departmental report includes accomplishment (goals met) in SAE.	204	7	3.43	18	8.82	60	29.41	109	53.43	10	4.90	**2.48**	0.86
Program informs the public of student accomplishments in SAE activities via selected media.	204	5	2.45	20	9.80	72	35.29	96	47.06	11	5.39	**2.43**	0.84
Students take pride in SAE activities by keeping neat and accurate records and recording accomplishments in records, photos and displays.	205	2	0.98	15	7.32	95	46.34	83	40.49	10	4.88	**2.41**	0.74
Program records and promotes teacher activities relative to conducting follow-up of student SAE program - i.e. follow-up records on file.	205	6	2.93	20	9.76	75	36.59	100	48.78	4	1.95	**2.37**	0.80
Students' parents, teachers, employers, resource persons, school administrators are integrally involved in SAE program.	206	7	3.40	19	9.22	84	40.78	90	43.69	6	2.91	**2.33**	0.82
Every student taking an agricultural education course has a plan for an out-of-classroom experience (semester or yearlong).	206	6	2.91	22	10.68	82	39.81	89	43.20	7	3.40	**2.33**	0.83
Instructor provides systematic supervision for SAE program by meeting with students at the site of experience a minimum of one contact per year (e.g. at school, or business).	206	6	2.91	23	11.17	85	41.26	87	42.23	5	2.43	**2.30**	0.81
SAE programs are assessed by advisory committee members, administrators and teachers.	206	13	6.31	34	16.50	91	44.17	65	31.55	3	1.46	**2.05**	0.89

Note. Item mean is shown in boldface. Scale: 1 = Nonexistent, 2 = Does not meet standard, 3 = Program needs works to meet standard, 4 = Program meets the standard, 5 = Program exceeds the standard.

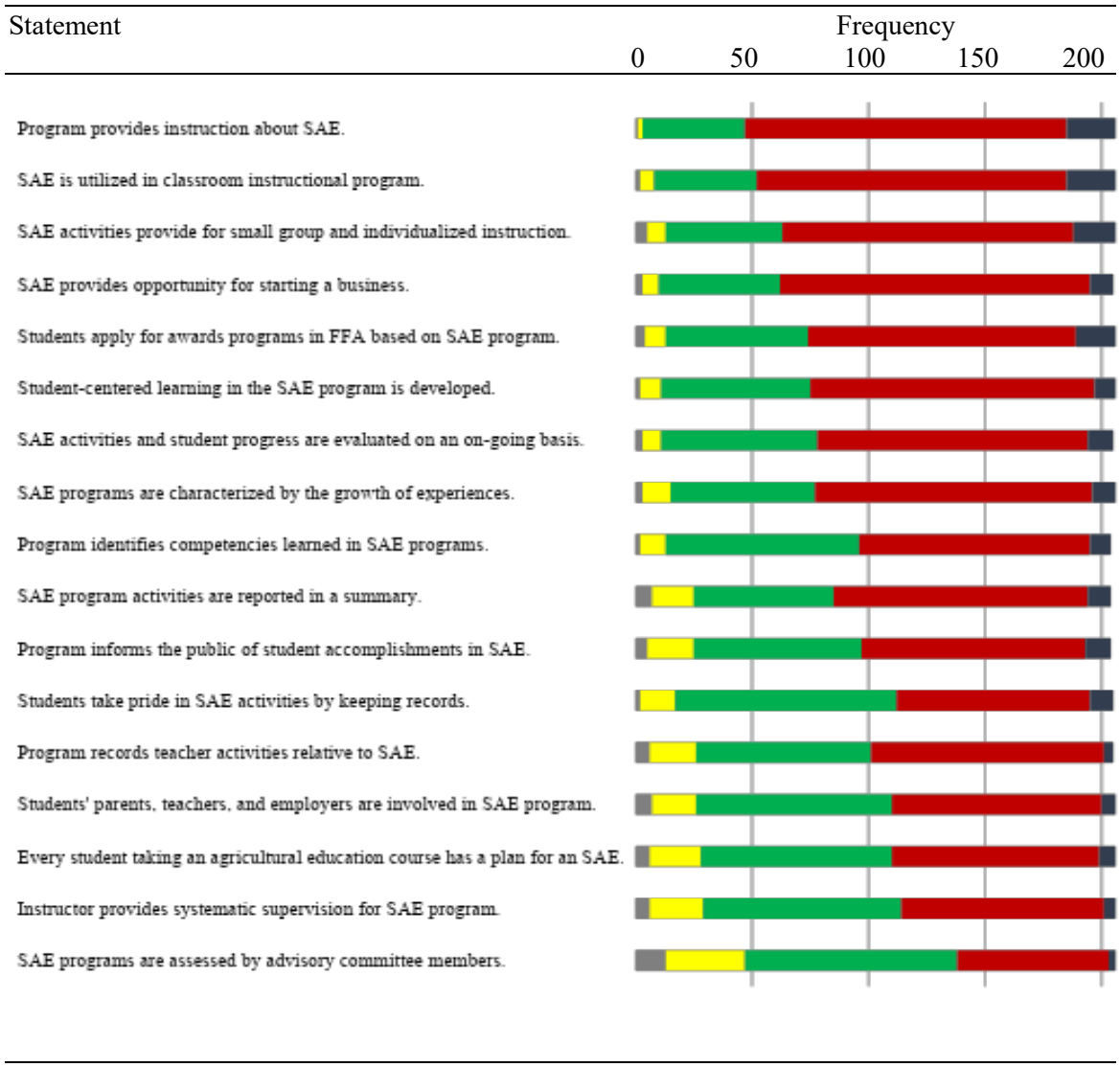

Figure 4. Standards for SAE in Agricultural Education

Conclusions/Recommendations/Limitations

This study reveals the extent to which educators believe their programs meet the Iowa Council on Agricultural Education standards. Standards provided by the Iowa Council on Agricultural Education identified general program standards, standards for FFA chapter activities, and standards for SAE programs in agricultural education.

The Theory of Planned Behavior analyzes how attitudes, subjective norms, and perceived behavior affect intentions ultimately influencing behavior. Having a clear understanding of the standards presented by the state can affect the activities implemented in the classroom to meet those standards (Ajzen, 1991). Agricultural educators are expected to meet standards provided to them by the state. Their intentions then turn into behaviors and are represented in the classroom. From the findings, it is apparent that agricultural educators from Iowa are integrating the

standards into their curriculum. Many respondents have identified their program as *meeting or exceeding* set standards, verifying educators are using the state provided standards as a foundation for their agricultural courses.

From the findings, many agricultural education programs are not using FFA alumni to assist in the instructional programing. In addition, teachers indicated a full report of activities was not presented to the advisory committee or school administrators. Myers, Dyer, and Washburn (2005) found that beginning teachers had problems organizing an effective advisory committee. An advisory council could provide valuable resources to assist a teacher in meeting standards. Sorensen, Lambert, and McKim (2014) found one of the highest in-service needs of educators is learning how to utilize a local advisory committee. This study indicates that alumni and advisory committees are not being used to their fullest potential. Agricultural teachers need more instruction or professional development on how to better incorporate alumni and advisory committees into their programs.

Many educators reported their programs were exceeding the standards set by the Iowa Council. With SAE being a component of a complete agricultural education program (NCAE, 2015a), it was pleasing to find a limited number of standards not being met or exceeded. Teachers who use class time to incorporate examples of SAE projects into instruction have seen higher quality SAE programs (Dyer & Osborne, 1996). SAE provides students with technical skills that prepare them for entry-level positions within the agricultural industry (Ramsey & Edwards, 2012). Parallel to the findings, research has identified barriers surrounding SAE, which include: a lack of facilities, equipment, supervision, time, summer employment; lack of support from both school administrators and community; limited number of students; and low student ambition towards projects (Mowen, Wingenbach, Roberts, & Harlin, 2007; Retallick, 2010; Steele, 1997).

This study can be used to identify where many agriculture programs are lacking when it comes to meeting standards. Knowing this information can be helpful when it comes to teacher retention and helping first year teachers, as providing support could keep teachers in the profession. This study also helped to identify those programs standards where teachers were or are deficient. One recommendation is to incorporate more professional development opportunities for educators. Professional development workshops improve educator's skills, which will also improve student learning (Shoulders & Myers, 2011). Professional development workshops related to content knowledge can increase educator's abilities to understand and teach content in new ways, thus being able to reach both state and national set standards (Rice & Kitchel, 2015). During professional development sessions, teachers create knowledge through past experiences, and by interacting with peers during professional development sessions (Shoulders & Myers, 2011). There are five key factors that make professional development effective. They include: allowing teachers to focus on content, be engaged in active learning, coherence with teacher beliefs, duration, and collective participation (Desimone, 2009). Professional development events for agricultural educators may happen during in-service programs, continuing educator courses or a university program to aid in teachers' improvement of teaching styles (Delnero & Montgomery, 2001).

Future recommendations of the findings of this study would be to increase the availability of the survey to a larger audience. A study should be conducted based on national agricultural education standards to measure the extent to which these standards are being met within the classroom. Another recommendation is to update the language used within the standards provided by the Iowa Council on Agricultural Education. As technological advancements have adjusted, the implementation of content and curriculum have also adapted. It is also recommended that follow-up questions be asked for frequencies that fell on the lower spectrum of the figures.

Another survey could be conducted in attempt to gain a deeper understanding of educators' perceptions regarding why their program is meeting or exceeding standards set by the Iowa Council on Agricultural Education.

Limitations are evident as this study only considered agricultural educators from Iowa as the sample size because of the standards used. Due to the nature of the sample, the results are restricted to Iowa and cannot be generalized to other states or programs. Responses in this study are self-reported based on educators' perceptions of how their program is performing and cannot be used to compare programs.

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