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IDENTIFYING QUALITY INDICATORS OF SAE AND FFA: A DELPHI APPROACH

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Abstract

The purpose of this study was to determine quality indicators for SAE and FFA according to 36 experts across the United States. This is a part of a larger study looking at all components of the traditional three-circle model. The study utilized the Delphi technique to garner expert opinion about quality indicators in Agricultural Education. For SAE, round two resulted in two of the 46 quality statements reaching consensus. In addition, 17 SAE items were determined not to be quality indicators. Four of the 26 SAE statements in round three reached consensus. Also, for FFA, round two resulted in 13 of the 65 quality FFA statements reaching consensus, with 16 of the 65 FFA items determined not to be quality indicators of FFA. Six of the 36 FFA statements in round three reached consensus. This study is valuable in determining a scientific basis for identifying possible indicators of quality SAE and FFA.

Introduction

In July 2005, the National FFA Board of Directors set a long-term goal of having 10,000 quality Agricultural Education programs by the year 2015 (National FFA Organization, 2005), commonly referred to as the 10 x 15 initiative. The 10 x 15 management team defines quality programs as those programs meeting national program standards for agricultural education. Therefore, the first priority was to develop standards based on the academic, technical, career, and life skills that are based on the integrated model of agricultural education (Sulser, personal communication, January 24, 2007).

Historically, the national standards project, which took place during the mid-1970s, was used to identify both program and content standards for high school agricultural education programs as well as state staff, teacher education, and adult education standards. (Standards for Quality Vocational Programs in Agricultural/ Agribusiness Education, 1977). Following the development of these national standards, many states developed quality standards for use at the state level (Camp & Crunkilton, 1985). Currently, several states have standards and quality indicators to improve or measure the quality of an agriculture program. However, these standard and quality indicator forms are typically self-administered and voluntary. In addition, the standard and quality indicator contents and formats differ from state to state. For example, Indiana's and Missouri's formats consist of 12 and 13 standards, respectively. Both have quality indicators for each standard, which are accompanied by a Likert-type scale. To meet the standard, the quality indicator ratings must add to or exceed the number provided for the standard (Missouri Department of Elementary and Secondary Education, n.d., Purdue University, 2005). Wisconsin's format consists of 25 standards. Each item can be checked as either meeting the standard, approaching the standard, or not meeting the standard (Wisconsin Department of Public Instruction, n.d.). One commonality in the standards was an organizational lens for sorting standards areas.

Agricultural education in public schools has long been associated with three integral, intra-curricular components (Dailey, Conroy, & Shelley-Tolbert, 2001; Dyer &

Williams, 1997; Hughes & Barrick, 1993; National FFA Organization, 2003; National Research Council, 1988; Talbert, Vaughn, & Croom, 2005). The lens for viewing the organizational approach to this study was the three integral components of agricultural education. The three components are conceptualized by a Venn diagram consisting of three overlapping circles titled instruction, supervised agricultural experience (SAE), and FFA (National FFA Organization, 2003). The limitation to using this model lies with the 10 x 15 initiative because one of the task forces is looking as alternative models. Therefore, the model may be more representative of traditional programs.

A review of research literature was also conducted to see if scientific evidence were present in determining what would constitute a quality indicator in agricultural education. The review revealed that studies did not directly address the research question and that the findings were inconclusive as a whole. Several states have developed program standards and quality indicators; however, most of these self-administered evaluations are voluntary and vary from state to state. The National Council for Agricultural Education and The National FFA Organization developed Local Program Success (LPS) in an effort to produce quality agricultural education programs. In addition, the 10 x 15 management team's goal is to define quality programs as those programs meeting the National Program Standards for Agricultural Education. With all of these different definitions of quality, what do the experts in the profession perceive as a quality agricultural education program?

Purpose and Methods

The purpose of this study was to determine quality indicators for SAE and FFA according to agricultural education experts (agricultural education teacher educators, state instructional staff, and high school teachers) across the United States. In particular, the objectives were to determine: (1) quality indicators of SAE and (2) quality indicators of FFA. This study was a component of a larger study that investigated instruction in addition; therefore, the methods outlined for this study will match the methods outlined for the study focusing on instructional quality indicators. This national study was exploratory in nature and used the Delphi technique. The Delphi technique is used as a method of structuring group communication (Linstone & Turoff, 1975). The Delphi technique is useful in professional education for gaining knowledge not often verbalized (Stewart, 2001).

The study utilized an expert panel (n = 36) of agricultural educators in different career phases of the profession. The panel consisted of 12 teacher educators, 12 members of state instructional staff, and 12 high school agriculture teachers all representing the six National Association of Agricultural Educators' (NAAE) regions. The researchers purposely selected experts at varying levels in agricultural education teacher preparation and advancement. To ensure an equal national representation, the six NAAE regions were utilized because of their variability – there were six regions to garner representation versus four regions outlined by FFA. Each group of 12 was comprised of two representatives from each of the six NAAE regions. Leadership within the profession was a key criterion in ensuring the panelists had a national scope in responding to the questions. The criterion for high school teacher selection was that the teacher must have been a NAAE outstanding young member, outstanding teacher, or outstanding middle/secondary program award recipient from the past 3 years or NAAE board members from the past 3 years. The criterion for teacher educators and state instructional staff was a minimum of three years of leadership experience. For this study, leadership experience was defined as current or past membership on the Council, National Association of Supervisors of Agricultural Education (NASAE) executive committee, American Association for Agricultural Education (AAAE) board of directors, or National FFA Board of Directors. For teacher educators, tenure was an additional requirement because tenure is typically based on having some type of recognized expertise in the field. Selection was also

based on proportion of gender in each of the categories to taken into account what has traditionally been a male-dominated profession.

This study utilized the Delphi Conference form. The researcher verbally invited the experts to participate in this study via telephone. Following the phone invitation, experts received a letter thanking them for participating and summarizing the phone invitation. A prenotice e-mail was sent three days prior to each questionnaire reminding the participants about the upcoming round. Panel members received an e-mail from the researcher containing a hyperlink to access the questionnaire for each round. The initial questionnaire was developed by the researcher and was constructed in Web format. Both face and content validity were established by a panel of experts of agricultural education and related faculty from two universities. Inter-rater reliability was addressed in developing the items from round one to round two. Two raters developed themes from the items independently and a low (below 40% consistency in all areas) was found. When conferring on the items, the raters determined that one rater was grouping items more broadly than the other. The two raters then conferred on the grouping to create the final list of items used in round two and subsequent rounds. In addition, to assist with reliability, the raters also developed topic areas to also assist with clarity of item interpretation from expert to expert.

Three open-ended questions were developed for round one and were stated as "what are specific indicators of quality [instruction, SAE or FFA] in a school-based agricultural education program?" This study utilized the *SAE* and *FFA* versions of the question. The responses from round one were categorized using a modified version of the open-ended question coding technique developed by Montgomery and Crittenden (1977). The modification was that topic areas were created after the items were selected because of the lack of consistent literature to define specific topic areas. After the responses to round one (n = 31; 86.11% response rate) were categorized, the round two questionnaire was developed and distributed. The round two questionnaire asked participants, "to what extent do you agree that the item is an indicator of quality SAE (or FFA)?" using a five-point Likert-type scale: 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree. Round two had a response rate of 86.11%.

Items from round two that received a score of "4" (agree) or "5" (strongly agree) by 100% of the respondents reached consensus and were identified as quality indicators. Items from round two that received less than 75% of the respondents scoring the item as a "4" or "5" were rejected as indicators and were therefore removed from the study. Literature is unclear on a proper cutoff for consensus. The researchers concluded the likelihood of agreement being reached with 25% or more being neutral or disagreeing would be slim. Therefore, the items on the round two questionnaire that did not reach consensus, but had more than 75% of the respondents scoring the items as a "4" or "5" were used in round three. Round three had a response rate of 83.33% and sought to determine consensus. Round three had participants indicate either agree or disagree for each item. The round three questionnaire was developed and included the individual's score, the group's mean score, and the standard deviation for each item. Participants were merely asked if they agreed or disagreed that an item should be a quality indicator. Round three used similar benchmarks for consensus. If an item reached 100% agreement, it was included as a quality indicator. If only 75% or less agreement from the panel was reached for any particular item, then that item was discarded as a possible quality indicator and not included into the next round.

Round four had a response rate of 85.71% and sought to determine if semantics contributed to disagreement on round three statements. Only participants who disagreed with the inclusion of an item from round three participated in round four. Participants were asked if changing the wording of the item would change their agreement on inclusion as a quality indicator. If they agreed that they would include the indicator if a change were made,

they were then prompted to explain how the indicator would need to be changed.

Findings

Objective one sought to determine what constitutes quality SAE according to experts in the profession. For ease of completing the instrument for round two, items were categorized in the following areas: records (n = 6), supervision (n = 8), satisfaction (n = 4), SAE characteristics (n = 15), instruction (n = 9), and recognition/awards (n = 4). Due to the length of this manuscript, the table summarizing the results was not included. Round two resulted in only 2 of the 46 quality SAE statements reaching consensus, as defined by 100% of respondents marking either a "4" (agree) or a "5" (strongly agree) for that particular item. Of those, one (50%) item came from the supervision area and one (50%) item came from the satisfaction area. In addition, 17 of the 46 quality SAE statements were determined not to be quality indicators of SAE and removed from the study, as defined by less than 75% of the respondents marking either a "4" (agree) or a "5" (strongly agree). The area was undecided on the remaining 27 quality SAE statements, meaning 99.9% to 75% of the respondents marked either a "4" (agree) or a "5" (strongly agree). Therefore, those items went to round three.

As illustrated in Table 1, four of the 26 SAE statements in round three reached consensus. Of those, two (50%) items came from the SAE characteristics area, one (25%) item came from the records area, and one (25%) item came from the supervision area. In addition, 1 of the 26 SAE statements was determined not to be a quality indicator of SAE, meaning less than 75% of the participants marked an "agree" for that item. The participants who disagreed on the remaining 21 SAE statements received the statements on their round four questionnaires. Round Four sought to determine if semantics contributed to disagreement on Round Three statements. For the SAE section, all items had at least one participant mark "disagree," indicating that he or she would not include the item as a quality indicator, even if they were provided the opportunity to wordsmith that item.

Table 1
Agreement Levels for SAE Statements in Round Three

Statement	Topic area[a]	% Agree
Teacher has supervision time for SAE	Supervision	100.0
Student has up-to-date records on SAE	Records	100.0
SAEs involve goal-setting	SAE Charac.	100.0
A diversity/variety of SAE types is promoted	SAE Charac.	100.0
Teacher is enthusiastic and informed about SAE	Instruction	96.6
SAE includes skill development	SAE Charac.	96.6
Opportunities exists for SAE's to be showcased	SAE Charac.	96.6
Each student maintains a portfolio of their experiences with SAE	Records	96.6
All students have an investment of time, energy and/or money	SAE Charac.	96.6
Advisory committee is satisfied with SAEs	Satisfaction	96.6
Training plans are used for placement SAEs	SAE Charac.	93.1

Statement	Topic area[a]	% Agree
SAE planning is based on agricultural content standards	SAE Charac.	93.1
SAE is taught as part of the curriculum	Instruction	93.1
Agriculture teacher maintains accurate records of all SAE supervision	Supervision	93.1
Students apply for related awards	Rec./Awards	89.7
SAE program has evidence of growth	SAE Charac.	89.7
A quality records keeping implementation program is in operation	Records	89.7
School administrators are satisfied with SAEs	Satisfaction	86.2
SAE is viewed as a program versus a project	Satisfaction	86.2
Parents are involved with their child(ren)'s SAE	Supervision	82.8
All students are engaged in (have a) SAE	SAE Charac.	82.8
Recordkeeping time is allocated during class	Records	82.4
Signed SAE agreements are on file	SAE Charac.	79.3
SAE is supervised year-round	Supervision	79.3
SAE involves continuous instruction	Instruction	79.3
By end of 2nd grading period, all students should be engaged in SAEs	Instruction	72.4

Note. 100% agreement (marked 4 or 5) = consensus, > 75% agreement = undecided, < 75% agreement = reject.
[a]SAE Charac. = SAE Characteristic; Rec. /Awards = Recognition/Awards.

Objective two sought to determine what constitutes quality FFA according to experts in the profession. Two independent coders developed 65 quality SAE statements for the round two questionnaire. For ease of completing the instrument for round two, items were categorized in the following areas: advisor (n = 5), support (n = 2), POA (n = 3), activities/events (n = 19), budget (n = 3), instruction (n = 9), practice/requirements (n = 16), diversity (n = 2), and student/members (n = 6). Due to the length of this manuscript, the table summarizing the results was not included.

Round two resulted in 13 of the 65 quality FFA statements reaching consensus, as defined by 100% of respondents marking either a "4" (agree) or a "5" (strongly agree). Of those, three (23%) items came from the advisor area, three (23%) items came from the activities/events area, three (23%) items came from the practices/requirements area, one (8%) item came from the support area, one (8%) item came from the budget area, one (8%) came from the diversity area, and one (8%) came from the student/member area. In addition, 16 of the 65 quality FFA statements were determined not to be quality indicators of FFA and removed from the study, as defined by less than 75% of the respondents marking either a "4" (agree) or a "5" (strongly agree). The area was undecided on the remaining 36 quality FFA statements, meaning 99.9% to 75% of the respondents marked either a "4" (agree) or a "5" (strongly agree). Therefore, those statements were included on the round three questionnaire.

As illustrated in Table 2, 6 of the 36 FFA statements in round three reached consensus. Of those, five (83%) items came from the instruction area and one (17%) item came from the activities/events area. The remaining 30 FFA statements all had an agreement percentage of 75% or better, meaning 75% or more of the participants marked a "4" (agree) or "5" (strongly agree). Therefore, none of the FFA statements were rejected in round three. The participants who disagreed on the remaining 30 FFA statements received the statements in round four.

Table 2
Agreement Levels for FFA Statements in Round Three

Statement	Topic area[a]	% Agree
The FFA chapter plans and conducts award and recognition programs	Act./Events	100.0
Instruction in personal and leadership development is provided for all FFA members	Instruction	100.0
FFA serves as a connecting activity for SAE and Instruction	Instruction	100.0
The local FFA chapter is in good standing with the state and national associations	Instruction	100.0
The chapter has an accurate constitution and/or bylaws that is reviewed regularly	Instruction	100.0
The local FFA chapter is student led	Instruction	100.0
Chapter advisor provides assistance to members in completing chapter and individual applications and reports, but does not complete the applications and reports for them	Advisor	96.7
FFA members are satisfied with the FFA chapter	Support	96.7
The program of activities includes activities in the following areas: member development, chapter development and community development activities/events	POA	96.7
Regularly scheduled FFA chapter business meetings are held	Act./Events	96.7
The chapter provides community service opportunities for members	Act./Events	96.7
FFA activities/events relate to the courses and topics included in the instruction	Instruction	96.7
Chapter has student recruitment program	Instruction	96.7
Chapter uses a committee structure to plan and conduct its activities	Instruction	96.7
Member dues are collected and submitted to the state association by the published deadline	Instruction	96.7
Chapter maintains an active public relations/public awareness program	Instruction	96.7
The chapter is involved in the school	Instruction	96.7
Chapter keeps high standards for its members no matter what the situation	Instruction	96.7
The FFA chapter has the financial resources to support the POA	Budget	96.6
Chapter budget is communicated to members and administration as appropriate	Budget	96.6

Statement	Topic area[a]	% Agree
Extended contract for FFA advisor	Advisor	93.3
FFA members are involved in the planning and implementation of a challenging Program of Activities (POA)/ Program of Work (POW)	POA	93.3
FFA members participate in FFA activities above the chapter level	Act./Events	93.3
Chapter members attend their state FFA convention	Act./Events	93.3
Members serve as officers at local, regional/area, state and national levels	Act./Events	93.3
Teacher provides instruction about FFA in the classroom	Instruction	93.3
The FFA chapter assists students to see and build relations with school, community, adults, and other students	Instruction	93.3
The chapter has a diverse representation of membership	Diversity	93.3
Pride of membership is evident	St./Members	93.3
The POA is distributed "widely" (to each member, administration, etc.)	POA	90.0
All students participate in activities/events of the student organization	Act./Events	90.0
Chapter officers are elected annually	Instruction	90.0
Mentoring exists from older to younger members	Instruction	90.0
Chapter builds tradition so students feel they belong to a historically great organization	Instruction	86.7
Chapter activities include areas of social activities	Act./Events	83.3
All FFA members participate in one or more of the following: proficiency awards program, career development events, FFA degree program, financial activities (fund-raising, etc.), community development, activities that promote safety/health, etc.	Act./Events	82.8

Note. 100% agreement (marked 4 or 5) = consensus, > 75% agreement = undecided, < 75% agreement = reject.

[a] Act. /Events = Activities/Events; St./Members = Students/Members.

Round four sought to determine if semantics contributed to disagreement on round three statements. Only participants who disagreed with the inclusion of an item from round three participated in round four. Participants were asked if changing the wording of the item would change their agreement on inclusion as a quality indicator. If they agreed that they would include the indicator if a change were made, they were then prompted to explain how the indicator would need to be changed. Participants indicated two items that would be included if those items were reworded. The POA item, "the program of activities includes activities in the following areas: member development, chapter development and community development activities/ events" would be included if the wording was changed to read, "among other activities, the POA includes activities in the following areas: member development, chapter development and community development activities/events" The activities/events item, "regularly scheduled FFA chapter business meetings are held" was accepted as written by the participant.

Discussion

There were some limitations that should be acknowledged. The use of FFA and SAE versus leadership development and experiential education limited the focus of the responses to the tools of SAE and FFA rather than the broader concepts behind them. If the questions focused on quality indicators of leadership development and experiential education, the result could have been different. In addition, some items were written such that two concepts could have appeared in one item. The researchers had to balance avoiding such "double-barreling" questions and having such an exorbitant amount of items that some respondents would have potentially refused to participate. However, in later rounds, if the experts were still uncertain whether an item should be an indicator, they could have offered suggested changes to that item.

There are six quality indicators of SAE, as agreed upon by the experts in this study. The experts identified the need for a diversity of SAE types to be promoted and that agriculture teachers need to have supervision time for SAE. This conclusion is consistent with Steele (1997) who noted that providing appropriate SAE opportunities for all students is the most important SAE practice for summer employment of agriculture teachers. The conclusion is also consistent with Camp, Clarke, and Fallon (2000) who found that an effective SAE is supervised by an adult. In addition, the expert panel identified the student having up-to-date records as a quality indicator which is also consistent with Camp et al. The conclusion that SAEs should be assisted by instructor, parents, and employers is consistent with Phipps and Osborne (1988) and the National Research Council (1988), who stated that the local agribusiness community should be utilized as a SAE resource. These findings imply that the experts are in line with the literature and it is recommended that these quality indicators be embraced by the profession.

The experts also identified SAEs involving goal setting and the student being satisfied with the SAE as indicators of quality SAE. There is no literature to support or reject these quality indicators, which implies there is a lack of literature related to these areas. Therefore, it is recommended that these areas be further researched. It can also be concluded that the panel does not see eye-to-eye on every statement proposed as a quality indicator of SAE. The proposed items "students independently manage their SAE programs," "SAE is leading to some type of recognition," and "students apply for related awards" are supported by the LPS's steps to success for SAE. However, the expert panel did not reach consensus on these statements; therefore, these statements were not included as quality indicators of SAE.

There are 19 indicators of quality FFA, as defined by the experts in this study. The indicators that FFA serves as a connecting activity for SAE and instruction; the chapter has an accurate constitution and/or bylaws; well-planned chapter business meetings are held; the chapter maintains accurate financial records; the chapter has a capable and trained officer team; chapter receives support from administrators, teachers, and advisory committee, parents, etc.; host activities that are designed to meet the needs of a diverse membership; and the chapter maintains accurate minutes of all meetings are quality indicators of FFA. These conclusions are consistent with the recommended 11 essentials of a successful FFA chapter provided in the *Official FFA Manual*. These findings imply that the expert panel is in line with the literature, and it is recommended that these quality indicators be embraced by the profession.

In addition, the expert panel identified the characteristics of the advisor as an indicator of quality for FFA. This conclusion is supported by recommendation made by Phipps and Osborne (1988) that the chapter advisor plays a large role in developing a successful FFA chapter. The conclusion that FFA members should receive opportunities to develop communication skills and be involved in leadership development is consistent with Staller (2001), who stated that the FFA component, compared with the instructional component, was best suited to teach life skills. Furthermore, this conclusion is consistent with Lockaby and Vaughn's (1999) finding that of the three components

of agricultural education, FFA is the best for teaching values and attitudes to students. These findings imply that the expert panel is in line with the literature, and it is recommended that these quality indicators be embraced by the profession.

The experts also agreed that the indicators of agricultural education students who wish to participate in FFA are accepted as members even if there is an inability to pay dues, officers and advisors meet periodically to plan the work of the organization, the chapter is student led, the chapter is in good standing with state and national associations, instruction in personal and leadership development is provided for all FFA members, and chapter plans and conducts award and recognition programs are indicators of quality FFA. There is no literature in agricultural education to support or reject these quality indicators, which implies there is a lack of literature related to these areas. Therefore, it is recommended that these areas be further researched.

The expert panel did not see eye-to-eye on every statement proposed as an FFA quality indicator. Proposed quality indicators such as "regularly scheduled FFA chapter business meetings are held" and "all students enrolled in the agricultural education program are members of the FFA" are supported by the *Official FFA Manual*. However, the expert panel did not reach consensus on these statements; therefore, they were not included as quality indicators of FFA. Furthermore, the item "FFA activities/events relate to the course and topics included in the instruction" and "teacher provides instruction about FFA in the classroom" are supported by LPS's steps for successful FFA. However, the expert panel did not reach consensus on any of these statements and therefore were not included as FFA quality indicators.

From a broader perspective, there is an implication based upon the number of items concluded as quality indicators for each category. The panel of experts has a clearer vision of quality FFA more that quality SAE. This implication brings more questions than answers, at least in the scope of this study. Is the profession somehow disjointed in its view of what SAE is or should be? Perhaps examining and thus developing SAE using a different set of lenses could meet a variety of students' needs. If this is the case, perhaps the profession should look at whether it's too prescriptive in its views of FFA. Further research is the only way to address these issues.

Because this is an exploratory study, there are several opportunities for further research. For one, these indicators could be examined by the rest of the profession—agriculture teachers, teacher educators and staff state—to see if the experts were in line with the profession. This would take the research into much more of a descriptive and generalizable nature. In addition, as noted above, some items do not match with agricultural education literature. Is it possible that we haven't studied those areas? Is there literature outside of the profession to support or refute these indicators? Finally, the use of the three-circle model to frame the methods and instrumentation could have implications as well. As the 10 x 15 new program model task force progresses, the profession may find the traditional three-circle model needs to be modified, expanded, revisioned, or identified as one of many possible program models. Taking the spirit of this study in a more broad interpretation of agricultural education program could result in indicators with broader or just different perceptions of program quality.

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