Pre-Service and In-Service Needs of Beginning
Agriscience Teachers Supervising Livestock SAE's

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Abstract

Agriscience teachers in Texas place a great deal of emphasis on agriculture programs and SAE's which are primarily geared toward livestock show projects. The purpose of this study was to determine the pre-service and in-service needs of beginning agriscience teachers in Texas for supervising SAE's involving livestock projects.

The design for the study was descriptive. A random selection of 145 beginning agricultural science teachers (1 year to 5 years) in Texas were surveyed in order to determine if they possessed any skill, ability, or scientific application deficiencies in the specified area of SAE livestock show programs. The data were collected by mailed surveys with a response rate of 57.7%.

The findings of the study were as follows:
1. The average beginning agri-science teacher in Texas had been teaching for 2.53 years and 2.52 of these years were in the schools where they were currently working.
2. The average beginning agriscience teacher was 29 years old.
3. The respondents reported the average agriscience program with beginning teachers in Texas had an enrollment of 123.4 students.
4. Beginning agriscience teachers believed that they were the least knowledgeable about poultry and rabbits and the most knowledgeable about goats and beef cattle.
5. The agriscience teachers had the least amount of years of participation with rabbits and poultry and the most years of participation with goats and beef cattle.
6. Beginning agriscience teachers in Texas found it difficult to select, purchase, feed and care for quality show rabbits, but much less difficult to select, purchase, feed and care for quality beef cattle and swine.
7. The most frequent stock show problems faced by beginning agriscience teachers were parents, making travel arrangements and getting students and livestock to different locations.

Introduction

Agriscience teachers in Texas place a great deal of emphasis on agriculture programs which are primarily geared toward livestock (Kieth, 1997). Dyer and Osborne (1995) stated that in Areas I and II in Texas, five percent of the agriculture departments reported every student was involved in an SAE program. This emphasis is due to the continuing competition in major stock shows, county, and local stock shows around the state.

It has long been proven there is a positive relationship between a quality SAE program and the influences they have on students. Teacher experience plays a role in student participation, and their knowledge and understanding of SAE is another factor research has reported to be related to SAE quality. Another teacher characteristic related to SAE effectiveness is teacher commitment to teach about SAEs in the classroom. Gibson (1987) reported a positive relationship between SAE program quality and the amount of classroom instruction on SAEs. Johnson, Lindhardt, and Stewart (1989) reported that beginning teachers considered conducting SAE programs, which include livestock shows, to be one of their highest priorities.

Other research related to SAE has also attempted to identify factors that contribute to SAE effectiveness. One of these factors is previous enrollment in high school agriculture by the teacher (Anyadoh, 1989). Several studies have focused on the identification of teacher characteristics associated with SAE program quality, and the amount of supervision provided by teachers has probably been studied more than any other factor. Many of these studies have confirmed the positive relationship between the amount of supervision (supervision visits) and SAE program quality and/or scope (Harris, 1983; Gibson, 1987; Anyadoh, 1989).

Although many studies have been conducted to show both presevice and in-service needs of beginning agricultural science teachers, Claycomb and Petty (1983) concluded that the in-service needs of beginning teachers change over time. Furthermore, Birkenholz and Harbstreit (1987) stated that the in-service needs of beginning agricultural teachers should be assessed and prioritized on a continual basis.

Theoretical Framework

One important factor research has found as related to SAE, is teacher knowledge and understanding of SAE (Hoover & Arrington, 1994). Anyadoh (1989) found another positive relationship to SAE quality to be previous enrollment in high school agriculture classes by the teacher. Gibson (1987) found one final characteristic of the teacher related to SAE effectiveness to be teacher commitment to teaching about SAE in the classroom. A positive relationship was present between SAE program quality and the amount of instruction on SAE in the classroom.

Lambreth (1986) reported some inhibiting factors to be a lack of agricultural background, inadequate resources, and large student-teacher ratios. Other barriers to SAE effectiveness were found to be a lack of facilities, low student desire, inadequate teacher time for supervision, student participation in other school activities, and various economic factors.

Ingersoll (1996) said that one of the most important characteristics of a qualified high school teacher is college training in the subject in which he or she teaches. Also, Dillard (1991) stated, it is hard to teach subjects for which you are not prepared for. And Schumacher (1993) said that teachers teach what they know.

Research by Shippy (1981) and Mundt (1994) concluded beginning teachers perceived their highest needs to be in the areas of program planning, development, and evaluation; planning, execution and evaluation of instruction; and managing student behavior. Kahler (1974) claimed beginning teachers' needs are somewhat different from those of the experienced teacher.

Cox (1985) stated due to lack of experience, demands on the undergraduate students to learn the competencies necessary to effectively carry out the FFA advisor role can become overwhelming.

Dyer and Osborne (1995) reported teachers claim to support SAE, however many fail to implement the programs fully, resulting in decreased student participation. The researchers also stated a high priority for beginning teachers is conducting SAE programs, but little relationship exists between their actual performance and their perceptions. The researchers recommend universities offer beginning teacher induction programs to assist beginning teachers in developing quality SAE programs.

Garton and Chung (1997) stated agriculture teachers have had and continue to have needs for in-service education. The researchers also reported that SAE development and supervision ranked in the top ten most important needs of agriculture teacher in-service training.

In 1987, Birkenholz and Harbstreit found the greatest need for in-service training to be in the areas of computer in the classroom, training agriculture/FFA contest teams, developing skills in agribusiness management and electricity, and assisting students with SAE records.

Shelhamer and Bishop (1985) conducted a study in which Montana employers were asked to identify personal characteristics that make people more employable in agribusiness. Over 45 percent of these employers preferred some type of FFA involvement. Agricultural employers preferred employees that had a strong academic background and had participated in extracurricular activities such as FFA SAE programs.

In Hankes' 1996 study, she reported that Houston Livestock Show and Rodeo exhibitors of champion livestock used their moneys to further their education. Over 50 percent of these exhibitors earned a bachelor's degree, while 93 percent have post high school education. Also, program completers of vocational agriculture have an employment rate of 99 percent.

The theoretical framework for this study provides evidence that Supervised Agricultural Experience (SAE) programs are an important teaching and learning tool that helps students develop skills and abilities leading toward a career. Previous research has also shown that a teacher's effectiveness often determines the success of an SAE program. However, the teacher's effectiveness is dependent upon the amount of training the teacher had in the specific area, therefore suggesting a need for in-service and pre-service training for agriscience teachers.

Purpose/Research Questions

Agricultural science teachers in Texas have the responsibility of advising, making recommendations, and selecting quality animals for the students' livestock show project. It is imperative that teachers in Texas stay current with research and new and improved methods of instruction. If agricultural science teachers are not competent in the area of livestock show programs, they will not be able to deliver an acceptable quality of instruction to their students.

The purpose of this study was to determine the pre-service and in-service needs of beginning agriscience teachers in Texas for supervising SAE's involving livestock. These needs will be used to determine any changes that should be made in curriculum/training and in-service programs.

As a means of accomplishing this purpose, answers to the following questions were sought:

1. What are the demographic variables of beginning agricultural science teachers in Texas?

2. What level of knowledge and past participation with livestock show projects do beginning agricultural science teachers possess?

3. What past exposure to livestock show programs do beginning agricultural science teachers possess?

4. Do beginning agricultural science teachers have the perceived ability to select and purchase quality show animals?

5. Are beginning agricultural science teachers familiar with feeding and care of livestock?

6. What are other problems associated with livestock show programs?

Research Procedures Used

The design for the study was descriptive. Beginning agricultural science teachers(1 year to 5 years) in Texas were surveyed in order to determine if they possessed any skill, ability, or

scientific application deficiencies in the specified area of SAE livestock show programs. In addition to demographic and open-ended questions, data were collected using Likert-type questions. The data were collected by mailed surveys from a sample of beginning agricultural science teachers in Texas.

The target population in this study was beginning agricultural science teachers that were teaching in the state of Texas. A sample of 145 individuals were randomly selected from a population of 290 beginning teachers. These individuals represented all parts of the state. Procedures were followed according to Dillman (1978) for controlling for non-response.

The survey instrument used for the collection of data was a questionnaire to determine the level of knowledge possessed by the instructors of SAE livestock show programs. The questionnaire was developed by the researcher following interviews of instructors at both the San Antonio and Houston Livestock Shows and an extensive review of related literature. The instrument was designed by the researcher using the Total Design Method (Dillman, 1978).

Part I of the survey collected demographic information that determined the dependent variables. Part II of the survey consisted of six parts. The first was a five-point scale to determine the participants' level of knowledge with 5 being very knowledgeable and 1 meaning no knowledge. Past participation was also determined in this section by simply filling in the number of years of participation. The next sections: high school and university exposure, selecting ability, and care of seven different common animals found in Texas show programs were all on five-point scales. There were 10 questions dealing with other problems that were answered by circling either yes or no. Two additional open-ended questions were included to determine problems with parent involvement and any other types of problems instructors might have experienced with show programs.

Surveys were mailed on April 2, 1999. Using standard follow-up methods, a 57.7% response rate was achieved by June 4,1999. Any questionnaires received after this date were considered non-respondents. Statistical analysis was completed using SPSS on a Macintosh computer system. Descriptive statistics were used to summarize the data pertaining to: (a) the demographic variables of beginning agriscience teachers in Texas, (b) their level of knowledge and past participation with livestock shows, (c) the past exposure Texas agriscience teachers have to livestock show programs, (d) their ability level to select and purchase quality show animals, (e) their familiarity with feeding and caring for livestock, and (f) other problems associated with livestock show programs.

Findings

Over one-third of the respondents (35.1%) had only been teaching agriscience one year. Slightly over 15 percent had been teaching two years and 23.4 percent indicated they had been teaching three years. Thirteen percent indicated they had been teaching for four years and 13 percent had been teaching 5 years as well. The mean years teaching was 2.53 and the median was 2.0 years.

Thirty-four percent of the teachers had only been at their school one year. Almost one-fifth had been at their current school two years and 22.4 percent have been there three years. Slightly over 14 percent had been at their current school four years and 9.2% have been there five years. The mean years at their current school was 2.52 and the median was 2.0 years.

The largest percentage (41.8%) of the teachers were between the ages of 27 and 31. Over one-third (36.7%) were between the ages of 22 and 26. Nine percent were 32 to 36 years of age and 5.2 percent were between 37 and 41. Slightly over three percent were between 42 and 46 and only 1.3 percent were between 47 and 51. There were no beginning agriscience teachers between the ages of 52 and 56 and only one was in the age group of 57 to 61 years of age. The mean age of the beginning agriscience teachers was 29.2 and the median was 27 years.

The majority of agriscience departments had between 1 and 100 students in their programs. Slightly over 40 percent of the agriscience departments had between 101 and 200 students enrolled and 3.8 percent had an enrollment between 201 and 300. Only 5.2 percent had between 301 and 400 students enrolled and 1.3 percent had between 401 and 500. The mean current enrollment was 123.4 and the median was 101.5.

Agricultural science teachers were asked to respond to the level of knowledge and years of past participation for seven different types of show animals. These included beef cattle, dairy cattle, sheep, swine, goats, rabbits, and poultry. The level of knowledge was answered using a five-point Likert-type scale where 1=No Knowledge and 5=Very Knowledgeable.

Table 1 shows that beginning agricultural science teachers possessed the least amount of knowledge in the area of poultry with a mean of 1.9. Following in order of knowledge level were rabbits (2.49), dairy cattle (2.52), swine (2.59), and sheep (3.26). Respondents indicated they had the highest levels of knowledge in goats with a mean of 3.84 and beef cattle with a mean of 3.80.

Table 1. *Level of knowledge of livestock*

Animal	M
Goats	3.84
Beef Cattle	3.80
Sheep	3.26
Swine	2.59
Dairy Cattle	2.52
Rabbits	2.49
Poultry	1.90

Note: Higher means indicate higher level of knowledge.

Table 2 shows the results of the question about years of past participation. The animal that respondents had the least years of participation with was rabbits with a mean of 3.54 years, followed closely by poultry (3.62 yrs.) and dairy cattle (3.73 yrs.). Next in years of participation was swine (4.68 yrs.), sheep (5.36 yrs.), goats (5.92 yrs), and finally beef cattle with 7.27 years of participation.

Table 2. *Years of participation in livestock show programs*

Animal	M
Beef Cattle	7.27
Goats	5.92
Sheep	5.36
Swine	4.68
Dairy Cattle	3.73
Poultry	3.62
Rabbits	3.54

Note: Higher means indicate more years of participation.

Table 3 lists the years of high school exposure to the animals by the participants in the study. Respondents reported having the least years of exposure to goats (0.67 yrs) followed by rabbits (.85 yrs.), dairy cattle (1.36 yrs.), poultry (1.58 yrs.) , and sheep (2.09 yrs). Respondents had the most exposure to swine with 2.73 years of participation and beef cattle with 2.79 years.

Table 3. *High school exposure to livestock*

Animal	M
Beef Cattle	2.79
Swine	2.73
Sheep	2.09
Poultry	1.58
Dairy Cattle	1.36
Rabbits	.85
Goats	.67

Note: Higher means indicate greater exposure.

Table 4 lists the college semesters that the participants had exposure to the different animals. Respondents had the least amount of exposure to rabbits with .46 semesters, followed by goats (0.67), poultry (1.03), dairy cattle (1.08), and sheep (1.71). Participants had the most university exposure to swine and with 2.17 semesters and beef cattle with 2.36 semesters.

Table 4. *University exposure to livestock*

Animal	M
Beef Cattle	2.36
Swine	2.17
Sheep	1.71
Dairy Cattle	1.08
Poultry	1.03
Goats	.67
Rabbits	.46

Note: Higher means indicate greater exposure.

Agriscience teachers were asked to rate their ability in selecting and purchasing quality show animals for show programs. A five-point Likert-type scale was used to determine their ability level where 5=Very Able and 1=Not Able.

Table 5 describes the ability level of the participants to select and purchase quality show animals. The survey shows that the participants felt they had the least ability in selecting and purchasing quality show rabbits with an ability level of 2.08. Following rabbits were dairy cattle (2.58), goats (2.73) and poultry (2.87). Participants felt they were more able to select and purchase quality beef cattle with an ability rating level of 3.94 and swine with a 4.04.

Table 5. *Livestock selection and purchasing ability*

Animal	M
Swine	4.04
Beef Cattle	3.94
Sheep	3.39
Poultry	2.87
Goats	2.73
Dairy Cattle	2.58
Rabbits	2.08

Note: Higher means indicate higher ability.

Agriscience teachers were asked to rate the level of difficulty they had in selecting and purchasing quality show animals for show programs. A five-point Likert-type scale was used to determine their level of difficulty where 5=Very Difficult and 1=Not Difficult. Table 6 describes the participants' level of difficulty experienced in selecting and purchasing quality livestock show animals. Participants experienced the most difficulty when selecting and purchasing rabbits with a difficulty level of 3.65 and dairy cattle with a level of 3.55. The next most difficult

to select and purchase were goats (2.95), poultry (2.97), and sheep with a 2.86. They indicated that they experienced the least difficulty selecting and purchasing beef cattle with a 2.61 level of difficulty and then swine with a 2.40.

Table 6. *Livestock level of difficulty*

Animal	M
Rabbits	3.65
Dairy Cattle	3.55
Poultry	2.97
Goats	2.95
Sheep	2.86
Beef Cattle	2.61
Swine	2.40

Note: Higher means indicate more difficulty.

Agricultural science teachers were asked to respond to their familiarity with feeding and care of the different livestock show animals. A five-point Likert-type scale was used to describe their abilities.

Table 7 describes the participants' familiarity with feeding show animals. Participants were least familiar with feeding rabbits 2.54. Following rabbits were dairy cattle (3.01), goats (3.13), poultry (3.38), and sheep (3.66). Participants were most familiar with the feeding of beef cattle (4.17) and swine with a 4.29 familiarity rating.

Table 7. *Familiarity with feeding of SAE livestock projects*

Animal	M
Swine	4.29
Beef Cattle	4.17
Sheep	3.66
Poultry	3.38
Goats	3.13
Dairy Cattle	3.01
Rabbits	2.54

Note: Higher means indicate a higher level of familiarity

Table 8 describes the participants' familiarity with the care of livestock show animals. The mean was somewhat similar to the familiarity of feeding of livestock with rabbits being the lowest with 2.73 familiarity rating and swine the highest with a 4.39 rating.

Table 8. *Familiarity with care of SAE livestock projects*

Animal	M
Swine	4.39
Beef Cattle	4.29
Sheep	3.84
Poultry	3.53
Goats	3.30
Dairy Cattle	3.28
Rabbits	2.73

Note: Higher means indicate a higher level of familiarity

Question six dealt with determining other problems with livestock show programs. To determine what other problems beginning agriscience teachers face, participants were asked a series of yes/no questions in which the participants responded by circling either "Yes" or "No." Table 9 shows the questions and results of the participants' responses.

Table 9. *Problems with livestock shows*

Question	% Yes	% No
Have you had trouble getting animals validated?	8.9	91.1
Have you had problems filling out entry cards?	9.0	91.0
Were there any problems once you arrived?	28.2	71.8
Were there any problems arranging travel?	37.2	62.8
If a student was ineligible, could you substitute another showman?	67.1	31.6
Did you remember all necessary supplies?	76.9	23.1
Did you order the proper number of gate/car passes?	82.1	17.9
Were show officials helpful?	85.9	14.1
Were there problems getting all students and livestock to different locations?	34.6	65.4

The respondents were asked in an open-ended question format whether they had experienced problems with parents at any time during the stock show season. Over half (55.7%) answered "No" and 44.3% answered "Yes."

Those responding "Yes" and indicating that they had had a problem with parents were grouped into six different categories. Table 10 shows that the biggest problem agriscience teachers had with parents were the parents who thought they knew everything and the new teacher knew nothing, therefore not following the teacher's advice. Closely following this was the problem of how parents conducted themselves at stock shows. The comments ranged from drinking with or around students to not being happy with the barn in which they were stalled. Next was the problem of the parents not thinking the teacher spends enough time with their child, parents doing all the work for the student, and parents undermining teacher authority.

Table 10. *Problems with parents*

Problem	Frequency
Parents think they know it all	10
Poor parent conduct at stock shows	8
Teacher does not spend enough time with their child	7
Parents do all the work for the student	6
Parent undermining teacher authority	5
Other problems	9
TOTAL	45[a]

[a]N=79, 34 did not respond

Respondents were asked to include any other problems they may have experienced during the show season which were not covered on the survey. After reading all the responses they were grouped into four different categories. Table 11 shows the participants who responded to this question had a number of comments that dealt with many problems, some of the most frequent being: validation and show rules, followed by problems with administrators and other teachers in the schools, and care and feeding of animals.

Table 11. *Additional problems*

Problem	Frequency
Validation and show rules	7
Care and feeding of animals	5
Problems with administration and other teachers	3
Other	7
TOTAL	22[a]

[a]N=79, 57 did not respond

Conclusions

The following conclusions are based on interpretations of data presented in the study and are restricted to only the population surveyed. They are also limited to the limitations found in chapter one of the study. The conclusions are as follows:

1. The average beginning agriscience teacher in Texas had been teaching for 2.53 years and 2.52 of these years were in the schools where they were currently working.

2. The average beginning agriscience teacher was 29 years old. This may be due to the fact that while these teachers are considered beginning teachers in Texas, they may have come from another state where they had previously been teaching.

3. The respondents reported the average agriscience program with beginning teachers in Texas had an enrollment of 123.4 students.

4. Beginning agriscience teachers believed that they were the least knowledgeable about poultry and rabbits and the most knowledgeable about goats and beef cattle.

5. The agriscience teachers had the least amount of years of participation with rabbits and poultry and the most years of participation with goats and beef cattle. However, they reported having the least years/semesters of high school and university exposure to goats and the most to swine and beef cattle.

6. Beginning agriscience teachers in Texas found it difficult to select and purchase quality show rabbits, but much less difficult to select and purchase quality beef cattle and swine.

7. When caring for and feeding livestock, beginning agriscience teachers were least familiar with the care and feeding of rabbits and most familiar with beef cattle and swine.

8. The most frequent stock show problems faced by beginning agriscience teachers were parents, making travel arrangements and getting students and livestock to different locations.

9. Almost half of the beginning agriscience teachers indicated having problems with parents during the stock show season.

Recommendations

The following recommendations are made by the researcher as a result of having conducted this study.

1. In future research concerning beginning agricultural science teachers, it should be made sure that the beginning agriscience teachers in the study are teachers who are just beginning their career and have no previous teaching experience.

2. Teacher educator programs in agricultural education should implement more training in the area of livestock care and evaluation to better prepare their teachers for the selection and purchasing aspect of stock shows as well as for the care and feeding of show animals leading up to the actual show.

3. More in-service workshops focused on small animals should be offered to beginning agriscience teachers.

4. University educators should make students in their agricultural education programs more aware of good public relations techniques to use, especially when dealing with parents.

5. Teacher educator programs in agricultural education should cover ownership requirements for animals shown in major stock shows.

6. In-service workshops which cover time and people management skills upon arrival at stock shows should be offered.

7. Teacher education curriculum for agriscience teachers should contain classes which include information about the SAEs.

8. Teacher educator programs in Texas should work with the Texas Agricultural Extension Service to develop pamphlets to deal with problems that can occur at livestock shows.

9. Studies similar to this should be conducted in other areas of the agriscience teachers' responsibilities, i.e., CDEs, LDEs, record books, etc. in order to verify the findings of this study.

10. Studies similar to this should be conducted in other states in order to verify the findings of this study.

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