

Agricultural Science Teachers' Perceptions of Male and Female Agricultural Science Teachers in South Texas

Randall H. Williams*

Paula K. Bodenhamer

Robn D. Haggerton

Texas A&M University-Kingsville, College of Agriculture & Human Sciences, Campus Box 156, Kingsville, Texas 78363

ABSTRACT

Agricultural science education is a male-intensive field. However, in recent years the role of women has expanded. Only 3.9% of agricultural science teachers in Texas are female, ranking well below the national average of 9.7%. The 357 male and 29 female teachers surveyed from Areas III, VII, and X in South Texas made judgements about teaching and leadership competencies. Males were ranked higher in agricultural mechanics, animal science and SAE programs project supervision. Females ranked higher in horticulture.

Agricultural education in public schools was active in only 30 states before the passage of the National Vocational Education Act (Smith-Hughes) in 1917 (Phipps and Osborne, 1988). This act provided funds to promote vocational education in agriculture for present and prospective farmers.

Female participation was limited in this area from the outset, but more recent legislation has sought to eliminate sexual discrimination. Since the inclusion of female students into Future Farmers of America (FFA) in 1969, the role of women in agricultural education has increased dramatically (Stockton et al., 1988). Data reported in a national study of the supply and demand for agriculture teachers in 1993 (Camp, 1994) indicated that Texas is below the national average in the proportion of female agriculture teachers. Nationwide, 9.7% of agriculture teachers are female compared to only 3.9% females among the 1,450 agriculture teachers in Texas (Camp, 1994a).

Agriculture is expected to employ over 3 million persons in the next 15 years (Leftwich, 1992). In 1992, agricultural education experienced the first decline in 28 years (Camp, 1994b), dropping to less than 10,000 teacher positions nationwide. Leftwich (1992) states, however, that secondary schools are expected to add over 437,000 total positions by the year 2005.

The objective of this research was to determine agriculture teachers' attitudes and perceptions toward male and female agricultural science teachers working in schools designated as members of Areas III, VII and X of the Texas FFA Association.

The specific questions to be addressed were:

1. What are male teachers' perceptions toward male and female teachers with regard to competence in instruction and management in lab, class, FFA and project situations?

Accepted 19 May 1997. *Corresponding author.

2. What are female teachers' perceptions toward male and female teachers with regard to competence in instruction and management in lab, class, FFA and project situations?
3. How do male teachers perceive male teachers' and female teachers' leadership and involvement in professional organizations?
4. How do female teachers perceive male teachers' and female teachers' leadership and involvement in professional organizations?
5. How do male and female teachers' perceptions compare with regard to male and female teachers competence in instruction and management in lab, class, FFA and project situations?
6. How do male and female teachers' perceptions compare with regard to male and female teachers' competence in leadership and involvement in professional organizations?

METHODS AND PROCEDURES

Instrumentation consisted of a self-developed questionnaire accompanied by a disclaimer cover letter. Questions on the instrument corresponded to the objectives of the study. The instrument consisted of one part each for demographics; professional associations; and leadership/teaching perceptions. The leadership/teaching consisted of the following sections: 1) whether or not the respondent has ever nominated or voted for a female in a leadership role; 2) perceptions of male and female leadership; and 3) perceptions of strength within selected teaching/instruction areas. The questions within the leadership and teaching/instruction areas were to be answered using a 10-point (1=very weak, 10=very strong) Likert-type scale. The instrument, not including the section on demographics, was divided into two sections, one to be answered by males and one to be answered by females. The division covered the event that some of the data would not be analyzed or the scope of the research would have to be modified. The instrument was reviewed for content validity by a group of experts composed of teacher educators. A pilot test of the instrument was administered to five undergraduate Agriculture Science Certification majors at Texas A&M University-Kingsville. The students were asked to comment on the clarity of the directions and the subject matter of questions, following which the instrument went through final revisions.

Participants in this study were male and female agricultural science and technology teachers present at their respective Area association meetings held on 2 August 1994, during the state Professional Improvement Conference in Corpus Christi, Texas. The teachers involved represented schools in Areas III, VII, and X. These teachers represent schools from the three areas in South Texas.

Data were analyzed using SAS Institute (1989) programs. The results were reported as descriptive statistics and inferential statistics. Selected responses of male and female participants were compared using Student's t-tests.

RESULTS

Demographics

A total of 397 surveys was distributed. Completed surveys were returned by 357 male and 29 female teachers. The mean age of male teachers was 38, mean teaching experience was 14 years, and males taught in areas averaging 5,000 - 9,999 population. Female teachers were, on average, working in larger towns with populations from 10,000 - 24,999. The mean age was 30, with 7 years of experience. Male teachers tended to teach in more single-teacher departments than did the females. Of female teachers, 73% reported being married compared to 92% of the males. Education level indicated that the average level of education for both groups was between a bachelor's degree plus hours and a master's degree, with the women averaging a higher level of education.

Professional Associations

Most teachers surveyed were members of VATAT (Vocational Agriculture Teachers Association of Texas) and secondly, NVATA (National Vocational Agriculture Teachers Association). Male respondents reported membership rates of 98.5% with VATAT (340 responding) and 32.8% with NVATA (319 responding). These figures were lower in comparison to the 100% VATAT membership (26 responding) and 46% membership rate with NVATA for females. The teachers were also asked to report whether or not they held membership within the NEA (National Education Association), PAWT (Professional Agricultural Workers of Texas), TCTA (Texas Classroom Teachers Association), and AVA (American Vocational Association), but the membership rates ranked considerably lower than rates for VATAT and NVATA.

Leadership Association

Both men and women indicated that they had voted for more women for association leadership positions than they had nominated. The greatest number of nominations and votes for female candidates occurred at the Area association level. Nearly 40% of the male teachers (n=351) had nominated a female, and 30.7% of female teachers reported that they had nominated a female. Reportedly, 64.9% of males and 61.5% of females had voted for a female for a leadership position.

Using a 10-point (1=very weak, 10=very strong) scale, males assessed male leadership with a mean score of 8.1, whereas females gave males an average of 7.6. In the assessment of female abilities, males responded with 7.8, and females with 8.3 (Table 1).

For classroom performance, males gave males a 8.3 compared to 7.7 for females. Female teachers rated males 8.0 and females 8.4. Leadership competence and willingness to serve are also reported in Table 1.

Table 1. Sample size (n), mean (\bar{x}) and standard deviation (SD) of perceptions of male and female agricultural science teachers leadership abilities.

	By Males			By Females		
	n	\bar{x}	SD	n	\bar{x}	SD
<u>Perceptions of Males' Strengths</u>						
Within professional settings	357	8.1	1.4	29	7.7	1.9
In the classroom	357	8.3	1.5	29	8.0	1.7
Competent to serve in leadership role	356	8.4	1.2	29	8.2	1.5
Willing to serve in leadership role	357	8.0	1.6	29	8.0	1.7
<u>Perceptions of Females' Strengths</u>						
Within professional settings	337	7.8	1.6	28	8.3	1.3
In the classroom	337	7.7	1.7	28	8.4	1.3
Competent to serve in leadership role	337	7.9	1.7	28	8.4	1.3
Willing to serve in leadership role	337	7.9	1.7	28	8.5	1.3

Perceptions of Teaching Competencies

The teachers responding to this survey evaluated teachers in ten selected teaching areas: agricultural mechanics, agribusiness, animal science, animal and plant production, horticulture, leadership, recreational management, pre-employment labs, cooperatives, and supervised agricultural experience (SAE).

In agricultural mechanics, perceptions of males rated much stronger than females ($P=0.0001$). Females rated males stronger at 8.8 and females 6.4 (Table 2).

In both agribusiness instruction and animal and plant production, males rated males stronger than females, and females rated females stronger than males (Table 2).

In animal science, both males and females ranked males stronger (Table 2). Females rated females nearly equal to males (8.6 vs. 8.4).

In animal and plant production, males rated male teachers as stronger than females, whereas females rated females as stronger (Table 2).

Horticultural instruction has traditionally been an area of instruction dominated by females. Both male and female teachers demonstrated this perception by rating females stronger than males. Females rated females at 9.3, and males rated females 8.5. Males received mean scores of 7.1 and 6.6 from females and males.

The leadership instruction area, as applied to this survey, included leadership, personal development, parliamentary procedure and FFA. Males rated male teachers stronger in leadership while female teachers rated females stronger. Male perceptions of males and females were 8.4 and 8.1, while female perceptions of males and females were 8.0 and 8.9 (Table 2).

For recreational management, both male and female teachers rated males

Table 2. Ranks and average scores† of male and female strengths within teaching areas.

Area	Male Teachers				Female Teachers			
	Judged by Males		Judged by Females		Judged by Males		Judged by Females	
	rank	\bar{x} score	rank	\bar{x} score	rank	\bar{x} score	rank	\bar{x} score
Agricultural mechanics	4	8.5	1	8.8	10	5.7	10	6.4
Agribusiness	8	7.9	8	7.7	4,5*	7.7	8	8.3
Animal science	1	8.6	3	8.6	4,5*	7.7	3	8.4
Animal and plant production	7	8.3	6	8.2	6	7.5	5	8.4
Horticulture	9	7.1	10	6.6	1,2*	8.5	1	9.3
Leadership	6	8.4	7	8.0	3	8.1	2	8.9
Wildlife and recreational management	3	8.6	2	8.6	8	7.1	9	8.0
Pre-employment labs	10	1.7	4	8.4	9	6.9	6,7*	8.3
Cooperatives	5	8.4	5	8.3	7	7.1	6,7*	8.3
SAE Project Supervision	2	8.6	9	7.2	1,2*	8.5	4	8.4

†Based on scale 1=very weak, 10=very strong.

*Tie.

as stronger.

Few teachers responded to the section of the survey addressing pre-employment labs. Mean male scores for this section were 1.7 by male teachers and 8.7 by females. Female teachers rated males stronger (Table 2).

For cooperative instruction, males rated males higher than female teachers. Females rated the groups equally strong at 8.3.

In SAE project supervision, male perceptions of male and female strengths averaged 8.5. Females rated males 7.2 and females 8.4 (Table 2).

CONCLUSIONS

As reported by both male and female teachers, nomination rates in professional organizations did not exceed 40%. In comparison, 64% of male and 61% of female agricultural science teachers reported voting for female candidates at the area association level.

Further study should be done to determine the reason for low nomination and voting rates. Perhaps few females express an interest in running. Even though females saw females as somewhat strong to strong (7-8 on the 10 point scale) in these areas, it could be that the effects seen by Knotts and Knotts (1975) such as sexually stereotyped guidance counseling and low self-esteem limit female entrance in leadership positions.

In general, males rated males higher than females, and females rated females higher than males in leadership ability.

In teaching competence, teachers in South Texas did not deviate far from expected social norms and tended to categorize different instruction areas as male and/or female dominated as evidenced by their mean scores much like those reported by Cano (1990), Robbin (1992) and McMillin (1975). Females were perceived in this study as stronger in leadership and horticultural instruction while males were perceived stronger in agricultural mechanics, animal science, and SAE project supervision. Male respondents scored both genders lower than did females.

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