

A REGIONAL DELPHI STUDY OF THE PERCEPTIONS OF NVATA, NASAE,  
AND AAAE MEMBERS ON CRITICAL ISSUES FACING SECONDARY  
AGRICULTURAL EDUCATION PROGRAMS

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Abstract

***This study utilized the expertise of secondary agriculture teachers, state supervisors and agricultural teacher educators to identify critical issues that secondary agricultural education programs will face over the next five years. This study was conducted using a four stage Delphi technique. The population for the surveys included secondary agriculture teachers, state supervisors and teacher educators throughout the Western Region of the American Association for Agricultural Education (AAAE). The national officers of AAAE, NASAE and NVA TA were also included in the study. The total number of teachers, supervisors and teacher educators included in the study was 82. The respondents to survey one listed over 400 critical issues. The top 20 categories were then used in the second survey. Only two categories: funding focal agricultural education programs and recruitment and retention of secondary agriculture teachers were ranked as extremely important issues in survey two. In surveys three and four respondents determined their level of agreement with specific critical issues. An ANOVA found that there was a significant difference in the way teacher educators and state supervisors ranked the importance of the reduction in state supervisors. Teacher educators indicated the issue was very important while state supervisors indicated it was extremely important.***

Introduction

Within the last decade, secondary agricultural education programs have experienced significant changes. A large number of programs have moved away from a production agriculture focus to emphasize agricultural science, biotechnology, sales or marketing. We have also seen a renewed interest in agricultural education and the FFA organization. In many states agricultural education enrollment has increased significantly and the National FFA Organization has witnessed membership growth over the past several years. Yet there is always concern with what lies ahead. What new problem will challenge agricultural education professionals in the next five years?

Webster's Collegiate Dictionary defines "issue" as a final outcome that usually constitutes a solution or resolution. Issues facing agricultural education programs and teachers are forever presenting new and difficult problems. Agricultural

education professionals regularly try to identify and discuss these issues. This study was undertaken to systematically utilize the expertise of secondary agriculture teachers, state supervisors and agriculture teacher educators to identify the leading critical issues that secondary agricultural education programs will face over the course of the next five years.

Theoretical Framework

The future of agricultural education is dependent on the profession being proactive and addressing issues that secondary agricultural education programs will face. The identification of issues relevant to the operation of an enterprise is vital to the enterprise's success (Campbell, 1983). Issue identification serves as the first step of a process known as issue management (Chase, 1977).

The emphasis on the future of agricultural education is nothing new. Almost 20 years ago,

Stewart and Shinn (1977) reported that, "The five areas of greatest concern to teachers, supervisors and teacher educators.. were: curriculum development, funding, teacher education, teacher shortage and evaluation" (pg. 25).

In an article on managing change in agricultural education, Herring (1995) stated, "In a dynamic, ever-changing world, I believe that perhaps the greatest challenge we face in agricultural education is that of anticipating and managing change." In his article, Herring identified ten challenges he thought would face agricultural education in the next 5-10 years. Herring's list included the mission of agricultural education, clientele, delivery system, modernization of supervised experience programs, teacher education programs, in-service education programs, reform of agricultural mechanics instruction, tech-prep, and updating of curriculum. As agricultural education prepares for the year 2000, it is important that critical issues be identified and addressed.

#### Purpose and Objectives

The purpose of this Delphi study was to utilize the expertise of secondary agriculture teachers, state supervisors of agricultural education and agriculture teacher educators to identify critical issues facing secondary agricultural education programs over the next five years. Specific objectives of the study were:

1. To identify a list of critical issues likely to face secondary agricultural education programs over the next five years.
2. To determine a priority ranking of critical issues identified by agricultural education professionals.
3. To determine if differences exist between secondary agriculture teachers, state supervisors of agriculture and agriculture teacher educators on their ranking or level of agreement with the critical issues identified.

#### Methods

This study was conducted using a modified Delphi technique to identify the critical issues likely to face secondary agriculture programs in the near future. The Delphi is "a group process technique for eliciting, collating, and generally directing informed (expert) judgement towards a consensus on a particular topic" (Delp et al., 1977, pg 168).

The population for the surveys included officers of the state vocational agriculture teacher associations, state supervisors of agricultural education, and agriculture teacher educators throughout the Western Region of the American Association for Agricultural Education (AAAE). In addition, the national officers of the AAAE, National Association of Supervisors of Agricultural Education (NASAE) and National Vocational Agriculture Teachers' Association (NVATA) were included in the study. Because of the small number within the target population, a census was conducted. The total number of state teacher association officers, state supervisors and teacher educators included in the study was 82.

This Delphi study included a series of four surveys. All surveys were developed and checked for content validity by a panel of experts which included a secondary agriculture teacher, state supervisor and teacher educator. The first survey contained an open ended question that asked respondents to list the 10 most critical issues they feel secondary agricultural education programs will face in the next five years.

The resulting list of critical issues was reviewed by the researcher and placed into 39 categories that represented common agricultural education concerns. Because some categories only had a single response, only the top 20 categories were used when developing survey two of the Delphi study. These categories were then used to write 20 statements that made up the second survey. Respondents rated each of the 20 statements from 1-not important to 4-extremely important. The

responses were then combined to provide a ranking of the 20 critical issues. Survey three contained 20 statements directly related to the ranking from survey two. Respondents were asked their level of agreement with the statement. The Likert scale used for survey three was 1-strongly disagree to 4-strongly agree.

The fourth and final survey included 22 statements developed from the previous surveys. Two additional statements were added relating to the quality of FFA programs and the federal presence of agricultural education and the FFA organization. To better refine the respondents' opinions related to the statements they were asked to either 1-disagree or 2-agree with the statement. Survey four also included space for respondents to provide written comments. Telephone follow-ups (dunning) were made to non-respondents on survey four to increase the response rate.

## Results

The mean response rate for all four surveys was 71%. AAAE members responded 78% of the time, NASAE members 81% of the time and NVATA members responded 61% of the time. Over 48% of the respondents completed all four surveys.

The response rate for survey one was 63.4%. The 52 respondents listed over 400 critical issues. These were grouped into 39 different categories. The top 20 categories were then used in the second survey. These 20 categories are listed in Table 1.

Respondents rated the 20 categories using a four point Likert scale ranging from 1 -not important to 4-extremely important. The response rate for survey two was 70.7%. Only two categories: funding local agricultural education programs and recruitment and retention of secondary agriculture teachers were rated as extremely important issues. The remaining 18 categories were ranked as very important issues. None of the 20 categories were ranked as somewhat or not important. Results from

survey two are presented in Table 2.

An analysis of variance found that there was a significant difference in the way teacher educators and state supervisors ranked the importance of the reduction in agricultural education state supervisors by state education agencies. Teacher educators ( $\bar{x}=2.95$ ) indicated the issue was very important while state supervisors ( $\bar{x}=3.64$ ) indicated it was an extremely important issue (Table 3). There were no other significant differences in the results from survey two.

The rankings from survey two were then used to create statements related to the ranked categories. Respondents were asked to determine their level of agreement with each statement by using a Likert scale ranging from 1-strongly disagree to 4-strongly agree. Fifty-seven respondents (69.5%) completed and returned survey three. Respondents strongly agreed with 13 of the 20 statements. The remaining seven statements had mean scores in the agree range. No statements had means in the disagreed range. Table 4 shows the results from survey three.

The final survey contained 22 statements created as a result of the previous survey. Respondents had to narrow their responses to either agree or disagree with the statement. The response rate for survey four was 81.7%. The largest percentage of respondents, 98.5%, agreed with the statements that it is the agriculture teacher's responsibility to develop support from the community and school administration for their program, all agriculture teachers should integrate academics into the curriculum, and every student should have a SAE program. Table 5 shows the results from survey four.

Chi-square analysis of the dichotomous (agree, disagree) questions in survey four indicated significant differences in the respondents' answers to three questions depending on their affiliate organization (NASAE, NVATA, AAAE). A large percentage, 88%, of secondary teachers agreed that

Table 1. Categories of Issues Identified in Delphi Survey One

Category	Number
Funding local programs	27
Curriculum (funding, development, up-to-date)	22
FFA organization (recruitment, programs, role)	22
Recruitment and retention of high school agricultural education students	19
Federal presence and leadership (FFA organization, mission, location, AAAE/NVATA/NASAE collaboration)	18
Instruction (9– 12, K- 14, delivery methods, #programs, agricultural literacy)	17
Technology	16
Professional development, In-service	15
State staffing (supervisors)	13
Teacher recruitment and retention	12
Program assessment/evaluation, standards, quality, image	1 2
Teacher education (# of university programs, quality, communication, etc.)	11
Integration of academics (science, math, English) and vocational education.	11
School-To-Work, 2+2+2	11
Community and administrative support of programs	10
Teacher supply (shortages/surplus)	10
Program articulation (Tech Prep)	8
Supervised agricultural experience (SAE) (computer record book, urban/suburban)	8
Federal/state funding	7
Industry needs, collaboration	6

school funding for FFA programs (activities) should be increased, while only 56.5% of the teacher educators agreed with the statement.

When asked if the quality of university teacher education programs has declined over the last 10 years, 56.5% of secondary teachers and

66.7% of state supervisors agreed. Almost 80% of the teacher educators who responded to the survey disagreed with the statement.

Sixty-five percent of state supervisors and 88% of secondary teachers agreed that many students are unable to enroll in agricultural

Table 2. Ranking of Categories from Delphi Survey Two

Category	Mean	SD
Funding local agricultural education programs.	3.74	0.52
Recruitment and retention of secondary agriculture teachers.	3.52	0.68
Recruitment and retention of high school students into agricultural education.	3.48	0.63
Federal and state funding of agricultural education programs, including block grants.	3.48	0.60
The development of collaborative relationships with business and industry.	3.47	0.57
Developing community and administration support for agricultural education.	3.41	0.62
Development of advanced, up-to-date curriculum.	3.38	0.67
FFA organization and leadership, including funding, programs and recruitment.	3.29	0.62
Providing supervised agricultural experiences (SAE) for urban, suburban and rural students.	3.28	0.72
The quantity and quality of university teacher education programs in agriculture.	3.28	0.72
Developing professional inservice activities for secondary agriculture teachers.	3.21	0.67
The reduction in agricultural education state supervisors by state education agencies.	3.19	0.79
Improving the image and quality of agricultural education programs through the development of program standards.	3.16	0.79
The incorporation of the latest technological advances into agricultural education.	3.07	0.62
The reorganization of the federal presence and leadership of agricultural education including the mission, location of FFA headquarters, and collaboration between AAEE, NVATA and NASAE.	3.03	0.88
Academic requirements for high school graduation and university admissions.	2.97	0.82
The integration of academics (science, math, English) and vocational education.	2.95	0.76
School reform issues including School-to-Work, Tech-Prep, 2+2 and program articulation.	2.93	0.77
Instructing students with different backgrounds, socio-economic levels and personal problems (i.e. drug usage, gang membership, etc.).	2.90	0.67
Instructional delivery methods (i.e. 9- 12, K- 14, ag literacy and number of programs).	2.72	0.67

Note.  $\leq 1.49$  =not important, 1.5-2.49=somewhat important, 2.5-3.49=very important, 23.50=extremely important.

Table 3. Analysis of Variance of the Reduction in Agricultural Education State Supervisors

Source	df	Sum of Squares	Mean Square	F Ratio	Prob. of F
Between Groups	2	4.1042	2.05	3.6	0.03
Within Groups	54	30.773	0.56		
Total	56	34.8772			

Table 4. Mean Ranking of Statements from Delphi Survey Three

Category	Mean	SD
Community and administration support is essential for a successful agricultural education program.	3.86	0.35
Adequate funding is essential for local agricultural programs.	3.7	0.46
Advanced, up-to-date curriculum is needed for ag. programs.	3.65	0.48
Secondary agriculture teachers need quality inservice activities to remain current on new advances in agricultural technology and instructional methods.	3.63	0.49
The reduction in state supervisors by state education agencies should be a concern to agricultural education professionals.	3.63	0.56
More secondary agriculture teachers must be recruited and retained.	3.6	0.49
Maintaining the quantity and quality of university teacher education programs in agriculture is very important.	3.58	0.5
Agricultural education programs should incorporate the latest technology into the instructional program.	3.56	0.5
Collaborative relationships with business and industry are essential for a successful agriculture program.	3.54	0.54
More HS students should be recruited into agricultural education.	3.53	0.5
Agriculture teachers should integrate academics (science, math, English) into the curriculum.	3.52	0.57
Quality FFA leadership, funding, and programs are essential to the future of agricultural education.	3.52	0.6
A federal presence for Agricultural Education, FFA, NVATA, AAAE and NASAE is vital to the future of agricultural education.	3.52	0.6

(table continues)

Category	Mean	SD
Agricultural Education must be included in school reform activities including School-to-Work, Tech-Prep, 2+2 and program articulation.	3.49	0.54
Academic requirements for high school graduation and university admissions should be a concern of all agriculture teachers.	3.49	0.54
Agricultural education programs need to improve their quality and image with the general public.	3.47	0.57
Supervised agricultural experiences (SAE) opportunities for urban suburban and rural students need to be developed.	3.45	0.54
Agricultural education programs must address the needs of students with different backgrounds, socio-economic levels and personal problems (i.e. drug usage, gang membership, etc.).	3.25	0.63
Federal and state funding for agricultural education programs should be increased through block grants.	3.18	0.8
New instructional delivery formats (i.e. 9-12, K- 14, agricultural literacy, new programs) need to be developed for agricultural education.	3.09	0.64

Note.  $\leq 1.49$  =not important, 1.5-2.49=somewhat important, 2.5-3.49=very important,  $>3.50$ =extremely important.

Table 5. Level of Agreement with Survey Four Statements

Statement	Agree (%)	Disagree (%)
It is the agriculture teacher's responsibility to develop support from the community and school administration for the agricultural education program.	98.5	1.5
All agriculture teachers should integrate academics into their agriculture curriculum.	98.5	1.5
Every agricultural education student should have a Supervised Agricultural Experience program.	98.5	1.5
Agriculture educators should play a key role in school reform activities.	93.8	6.2
Business and industry should play a greater role in agricultural education.	92.5	7.5
New curriculum materials developed by the National Council for Agricultural Education and other organizations benefit secondary agricultural education programs.	92.4	7.6

(table continues)

Statement	Agree (%)	Disagree (%)
There is a shortage of qualified agriculture teachers to fill existing and future secondary agriculture programs.	91	9
The percentage of high school agriculture students that join the FFA needs to be increased.	90.8	9.2
Secondary agriculture teachers need to recruit more high school students into agriculture classes.	87.9	12.1
Agriculture educators should be prepared to deal with drug users, gang members or violent students in their classrooms.	84.6	15.4
More supervision and assistance is needed from State Supervisors of Agricultural Education	78.8	21.2
School funding for FFA programs should be increased.	73.8	26.2
Agricultural education programs should offer instruction in agriculture for students from kindergarten through adults.	70.3	29.7
Many students are unable to enroll in agricultural education because of high school graduation requirements.	67.7	32.3
The national headquarters of the National FFA Organization should stay in Alexandria Virginia.	53.8	46.2
The general public has a poor image of agricultural education programs.	48.5	51.5
Ensuring adequate funding for local agriculture education programs is the most important issue facing secondary agricultural education.	46.9	53.1
The quality of university teacher education programs has declined over the last 10 years.	45.2	54.8
Agricultural education and the FFA should be located within the U.S. Department of Education in Washington D.C.	41.3	58.7
Current inservice educational offerings meet the needs of secondary agriculture teachers.	38.8	61.2
Block grant funding will benefit agricultural education programs.	21.1	78.9
Agricultural education programs utilize the latest in state-of-the-art technology in their instructional programs.	19.7	80.3

education because of high school graduation requirements. Teacher educators were evenly split, 50% agreeing and 50% disagreeing with the statement. Results of the chi-square analysis are

shown in Table 6.

Respondents provided written comments to the statements contained in survey four. In response



to statements on program funding one respondent stated, "Funds follow quality programs." One respondent writing about recruiting stated,

"Recruiting is the key to encouraging top students to enroll." The following is a sample of the comments written by respondents concerning

Table 6. Chi-Square Analysis of Survey Four Dichotomous Questions

Question	State Supervisors		Secondary Teachers		Teacher Educators		Chi-Square
	Agree (%)	Disagree (%)	Agree (%)	Disagree (%)	Agree (%)	Disagree (%)	
School funding for FFA programs should be increased.	76.5	23.5	88	12	56.5	43.5	6.22*
The quality of teacher education programs has declined over the last 10 years.	66.7	33.3	56.5	43.5	20.8	79.2	9.73*
Many students are unable to enroll in ag. ed. because of high school graduation requirements.	64.7	35.3	87.5	12.5	50	50	7.81"

\*p<.05

teacher education programs, school reform, the location of agricultural education and FFA leadership, state supervisors and the image of agricultural education.

"They [teacher educators] are not in tune with what is needed NOW!"

"My son is in his second year of teaching-was much better prepared than I was."

"Show teachers how to live with Block Schedules, Portfolios, etc."

"I believe we can be leaders in school reform."

"FFA will not fail or fall apart if it moves."

"Significance of Geo. Wash. estate can't be

overlooked."

"Ag Ed in USDA/CREES, FFA in USDE."

"USDA if they are willing to put emphasis on education."

"The trend needs to be reversed that keeps supervisors out of the schools."

"Supervisors are overloaded with other jobs."

"They [general public] have a poor image of some Agri-practices which reflect on Ag Ed programs."

#### Conclusions

By analyzing surveys two, three and four, the two most critical issues as identified by the

respondents were funding of local agricultural education programs and recruitment and retention of secondary agriculture teachers. Additional issues of concern were the recruitment and retention of high school students into agricultural education, federal and state funding of agricultural education programs including block grants, and the development of collaborative relationships with business and industry.

The National FFA's decision to move their business operations from Alexandria VA was a key issue in this study because the research was conducted during the spring of 1996 when most of the decisions were being made. The study found that the location of the National FFA Organization headquarters was not an extremely important issue, ranking only 15th out of 20 critical issues facing secondary agriculture programs. However, 54% of respondents agreed that the national headquarters of the FFA should stay in Alexandria, Virginia. The majority of respondents disagree that Agricultural Education and the FFA should be located within the U.S. Department of Education in Washington D.C. This would indicate that the majority of respondents would like to see Agricultural Education and the FFA be under the authority of the U.S. Department of Agriculture.

Over 78% of the respondents disagreed that agriculture education programs utilize the latest in state-of-the-art technology. This suggests that state supervisors, secondary teachers and teacher educators all see a need for updating the agricultural technology equipment, including computer hardware and software, that is used in secondary agriculture programs.

This study also found that the perceptions of state supervisors and secondary agriculture teachers differed greatly from those of teacher educators in two areas. State supervisors and state agriculture teacher organization officers agreed that school funding for FFA activities should be increased and that the quality of teacher education programs has declined over the last 10 years. Teacher educators

only slightly agreed with the need for more funding and strongly disagreed that the quality of teacher education programs has declined. Obviously, there is a difference of opinion between teacher educators and other professionals in agricultural education.

### Recommendations

The critical issues identified in this Delphi study are not very different from those identified 20 years ago by Stewart and Shinn (1977). Funding of local agricultural education programs continues to be a top priority. The leadership of the NVATA, AAAE and NASAE should work together, perhaps under the auspices of the Agricultural Education Division of the American Vocational Association, to develop strategies for improving funding for agricultural education on the local, state and national levels. The NVATA should work closely with teacher educators and National FFA staff to develop recruitment materials, scholarships and employment opportunities for future agriculture teachers.

One of the important recommendations that should result from this study is the importance of an open dialogue concerning the future of agricultural education. All stakeholders including state supervisors, secondary teachers and teacher educators must continually and systematically discuss issues of concern to the profession. An obvious venue for this discussion is the state, regional and national meetings of the ***Reinventing Agricultural Education for the Year 2020*** project.

The results of this study should be reviewed by the boards of directors of the NASAE, NVATA, AAAE, the National Council and the National FFA Organization so they can keep up-to-date with the concerns of the profession. This type of study should be replicated in other regions of the country or conducted nationally to better gauge the pulse of the profession.

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