PERCEPTIONS OF IOWA SECONDARY SCHOOL PRINCIPALS TOWARD AGRICULTURAL EDUCATION

Neasa Kalme, Instructor
Hamilton, Indiana

James E. Dyer, Assistant Professor
University of Missouri

Abstract

The primary purpose of this study was to determine principals 'perceptions of secondary agricultural education programs in Iowa high schools with agricultural education programs. A stratified random sample consisting of 147 principals was selected. Researcher-constructed questionnaires were developed, tested and mailed to a stratified random sample of principals. Strata consisted of Agricultural Education districts as outlined by the State of Iowa Department of Education.

Overall, principals expressed favorable perceptions of agriculture programs, courses, and teachers. They expressed perceptions that students enjoy agricultural education courses and believed those courses reinforced learning in other subject matter areas.

The overall knowledge or familiarity level of agricultural education programs by principals was generally positive. Principals believed agricultural education teachers were high quality teachers, but did not believe they were more effective than other teachers. Principals tended to support agricultural education programs, and disagreed with the statement that agricultural education courses provided little for students' intellectual development. They also perceived agricultural education programs to be important to their community, and that any high school student could benefit from coursework in agricultural education. Recommendations included further research to determine the relationship of principals 'perceptions to actual practices of support.

Introduction/Theoretical Framework

Agricultural education has been an integral component of the American educational system since its inception. However, it serves only a fraction of the students who could be enrolled in this type of educational program. Although peak enrollments have been impressive, agricultural educators have not been able to sustain a consistent pattern of growth. For example, after several years of steady increase, agricultural enrollments sharply increased until they peaked in 1977 at 697,500 students (National FFA Organization, 1986). By the early 1980s, enrollments in some states had declined by as much as 60% (Dyer & Osborne, 1994). Continuing the roller coaster pattern, enrollments today are approaching the peak levels of the 1970s.

Iowa agricultural education enrollments have mirrored national trends throughout these periods. Nationally, student numbers in agriculture programs peaked at 17,293 in 1976, then declined to 9,161 students by 1990 (Andreasen, Breja, & Dyer, 1997). This decline represented an enrollment loss of over 47% of the student population. As with national enrollments, the 1997- 1998 academic school year agriculture program enrollments have rebounded to 14,554 students (Iowa Department of Education 1997). What is the explanation for the loss and recovery

in enrollment numbers? Anecdotal data suggests that program support plays a major role in recruitment and retention of students. Especially important is the support of principals.

Literature shows that during the 1970s and 1980s principals viewed agricultural education on a scale somewhere between neutral to positive (Barnett, 1985; Marrs, 1983; Price, 1990; Pryor, 1984). Specifically, agriculture programs were viewed as being "vocational"-producing workers for positions in production agriculture. During this time period, however, enrollments declined as did the demand for these workers. As agricultural education programs became more scientific in nature, enrollments correspondingly increased. Dyer and Osborne (1994) noted improved perceptions of agricultural education programs among guidance counselors in schools where science in agriculture programs were in existence. Likewise, counselors were more willing to recommend those courses to students (Dyer & Osborne). Have the perceptions of principals also changed?

A gap in the knowledge base exists in principals' attitudes toward agricultural education since the late 1980s-the period of time when agriculture programs were beginning to initiate the changes that have resulted in the programs of today. Were those changes at least in part a result of administrative pressures to modernize curricula? If so, relationships with principals may be part of the reason for the decline and resurgence in agriculture program enrollments. Have principals' attitudes changed toward the "new" agricultural education programs?

According to the National Research Council (1988), agriculture is too important a topic to be taught only to a relatively small percentage of students. As such, agricultural education programs around the nation have experienced several enrollment fluctuations which research has failed to fully explain. Are those fluctuations caused by the changing nature of the agricultural industry, antiquated curricula, support for agricultural programs, or other external or internal factors?

Fishbein and Ajzen (1975) noted that intentions to participate activities could be predicted based upon knowledge, observation, or other information about some issue. This model suggests that a person's intent to support or become actively involved in an agricultural program may be predicted by analyzing his/her beliefs about the program. Greenwald (1989) supported this theory, reporting that individuals with positive attitudes toward a subject or situation tend to evaluate them positively. As applied to this study, if principals are interested in, knowledgeable about, have a positive image of, and are involved in agricultural education programs, they will likely support the program in both words and actions. Consequently, if beliefs are negative; interest, knowledge, image, and activities of support will likely also be limited.

Purpose

The primary purpose of this study was to determine principals' perceptions of secondary agricultural education programs in Iowa high schools. Specifically, this study addressed the following research questions:

1. What are the perceptions of Iowa high school principals toward secondary agricultural education programs?
2. What are the perceptions of Iowa high school principals toward secondary agricultural education courses?
3. What are the perceptions of Iowa high school principals toward secondary agricultural education teachers?

Methods/Procedures

This applied research project used a

descriptive survey design, The population included all principals in Iowa high schools with agricultural education programs during the 1997-1998 academic school year (N=237). The State of Iowa Department of Education provided a list of teachers which served as the population frame for the study. A stratified random sample was selected from the population using computer generated random numbers. Strata consisted of the six FFA districts.

Sample size was determined using Krejcie and Morgan's (1970) formula. From this formula it was determined that 147 principals would be needed to obtain a 5% degree of accuracy at a 95% confidence level. Of the total sample size, 26 were selected from the Northeast FFA district, 25 from each of the North Central, Northwest, and Southeast FFA districts, and 23 from each of the South Central and Southwest FFA Districts.

The data-gathering instrument was developed by the researcher based upon a review of literature from prior studies using Illinois guidance counselors (Dyer, 1994; Matulis, 1989). The questionnaire was composed of three-sections. Section I measured the construct "Principals' Perceptions Toward Agricultural Education Programs." Section II measured the construct "Principals' Perceptions Toward Agricultural Education Courses." Section III measured principals' perceptions toward the construct "Quality and Perception of Agricultural Education Teachers." In these three sections, participants were asked to indicate the degree to which they agreed or disagreed with each statement. A five-point Likert-type scale (1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly Agree) was used for each of the three constructs.

Expert judges consisting of faculty in the College of Agriculture determined the face, content, and construct validity of the instrument, Revisions were made to the instrument based upon recommendations of the judges. It was then pilot tested using 27 principals randomly selected from the target population who were not participants in the study. Reliability as a measure of internal consistency was calculated on the three sections of the questionnaire. Cronbach's alpha reliability ratings for Constructs I, II, and III were .63, .83, and .89 respectively. Because the researchers were also interested in principal response on individual items, a split-half reliability determination was also made. The Spearman-Brown technique yielded a reliability of .87.

Questionnaire packets were mailed to participants with a follow-up postcard mailed approximately three weeks later. A second questionnaire packet was mailed to non-respondents approximately five weeks after the first mailing. A reminder letter was mailed seven weeks after the first mailing. A total of 134 respondents completed the questionnaire for a response rate of 91.2%. Because of the high response rate, non-response error was addressed by comparing early and late respondents. According to Krushat and Molnar (1993), late respondents closely resemble non-respondents. No categorical differences were found between the early and late respondents on any of the three constructs (Table 1).

Data were analyzed using descriptive statistics, including measures of central tendency and variability. The SPSS was used to organize and analyze data. Categorical analysis was performed using the following scale: Strongly Disagree (M = 1.0-1.49), Disagree (M = 1.50-2.49), Uncertain (M = 2.50-3.49), Agree (M = 3.50-4.49), Strongly Agree (M = 4.50-5.0).

Results and Findings

Generally, high school principals in Iowa expressed favorable responses on questions pertaining to secondary agricultural education. As indicated in Table 1, principals expressed favorable perceptions toward each of the three measured constructs: programs, courses, and teachers.

Table 1. Grand Means of Instrument Constructs

Construct	Grand Mean[a]
I – Principals' Perceptions Toward Agricultural Education Programs	3.82
II – Principals' Perceptions Toward Agricultural Education Courses	3.73
III – Quality and Perception of the Agricultural Education Teachers	3.7

[a]The grand mean was determined after reverse coding of negative statements.

Research Question 1: What are the perceptions of Iowa high school principals toward secondary agricultural education programs?

Overall, principals expressed generally favorable perceptions of agriculture and high school agricultural education programs (Table 2). Over 78% of the respondents agreed or strongly agreed that agricultural education programs were positive influences in the community. Likewise, principals perceived that there are numerous opportunities for employment in the field of agriculture and that the image of agriculture is improving. Principals also agreed that college bound students should enroll in agricultural education courses.

Some uncertainties existed, however. Principals were uncertain as to whether agricultural education facilities and equipment are up-to-date. They also expressed attitudes which were uncertain as to whether or not students are more interested today in enrolling in agricultural education courses, or if students who take agricultural education courses tend to be less academically able. A frequency distribution indicated that 30.1% agreed or strongly agreed with this statement, whereas 48.1% of the respondents disagreed or strongly disagreed. Principals disagreed with the statement that agricultural education focuses too heavily on the development of specific job skills.

Principals gave mixed responses about the statement that there is little time for enrollment in agriculture because of increased graduation requirements. Nearly 64% of the respondents disagreed or strongly disagreed with the statement, but the statement generated a relatively high standard deviation (SD = 1.18). This may indicate that problems exist in some schools but not in others.

Research Question 2: What are the perceptions of Iowa high school principals toward secondary agricultural education courses?

Principals were positive in their attitudes toward agriculture courses. As noted in Table 3, principals believed agricultural education courses to be beneficial for both high achievers and also for low achievers. They also agreed that students enrolled in agricultural education courses seemed to enjoy them. They disagreed with the statement that agricultural education courses provide little for students' intellectual development, that agricultural education courses should be offered primarily in rural areas, and that agricultural education courses should be offered in technical schools/centers rather than in high school. Principals believed agriculture courses to be valuable in preparing students for careers. They agreed that agricultural education courses develop skills needed for employment in business and industry, and that agricultural education courses encourage students to apply knowledge and skills to real-life problems.

Principals agreed that agricultural education courses reinforce learning in academic courses. However, they were uncertain as to whether other elective courses are more valuable to college bound students than are agricultural education courses. They were also uncertain if agriculture courses are easier than other courses.

Table 2. Principals' Perceptions of High School Agricultural Education Programs (Construct I)

SItem Statement	M	D
There are numerous opportunities for employment in the field of agriculture.	4.39	.72
The agricultural education program in my school is a positive force in my community.	4.01	1.04
College bound students should take agricultural education courses.	3.67	.97
The image of agriculture is improving.	3.67	.75
Students are becoming more interested in enrolling in agricultural education courses.	3.27	.85
The facilities and equipment used in agricultural education courses are adequate and up-to-date.	2.98	.98
Students who take agricultural education courses tend to be less academically able.	2.77	1.07
Because of increased graduation requirements, there is little time for students to enroll in agricultural education courses.	2.5	1.18
Agricultural education focuses too heavily on the development of specific job skills.	2.38	.76

Table 3. Principals' Level of Support for Agricultural Education Courses (Construct II)

Item Statement	M	SD
Students enrolled in agricultural education courses seem to enjoy these courses.	4.23	0.64
High school agriculture courses are beneficial for high achievers.	4.21	0.79
Agricultural education courses develop skills needed for employment in business and industry.	4.18	0.71
Agricultural education courses encourage students to apply knowledge and skills to real-life problems.	4.16	0.6
High school agriculture courses are beneficial for low achievers.	4.11	0.59
Agricultural education courses reinforce learning in academic courses.	3.85	0.72
Other elective courses are more valuable to college bound students than are agricultural education.	2.93	0.99
Agricultural education courses are easier than other courses offered in our school.	2.81	0.95
High school agricultural education courses should be offered primarily in rural areas.	2.17	0.84
Agricultural education courses should be offered in technical schools/centers rather than in high school.	2.11	0.79
Agricultural education courses provide little for students' intellectual development.	1.87	0.73

Research Question 3: What are the perceptions of Iowa high school principals toward secondary agricultural education teachers?

Table 4 displays principals' attitudes toward statements pertaining to agriculture teachers. Principals view agriculture teachers as cooperative in their professional relationships. The highest rated statements in this construct dealt with the professional relationships that agriculture teachers have with other teachers and administrators. Principals also agreed that agriculture teachers have positive professional relationships with guidance counselors, but the frequency distribution revealed a lower level of agreement. Approximately 77% of the respondents agreed or strongly agreed with the statement about counselors whereas 91% and 89% agreed or strongly agreed with statements about other teachers and administrators, respectively.

Table 4. Principals' Knowledge Level or Familiarity Level of Ag Education Teachers (Construct III)

Item Statement	M	SD
Agricultural education teachers have positive professional relationships with other teachers.	4.14	0.76
Agricultural education teachers have positive professional relationships with administrators.	4.06	0.74
The agricultural education teacher in my school is a high quality teacher.	4.04	1.01
Agricultural education teachers utilize many community members/resources in their class topics.	4.01	0.82
The agricultural education teacher keeps the agricultural education program current to meet employment needs.	3.95	0.79
The agricultural education teacher involves an advisory committee in determining objectives of agricultural education programs.	3.89	0.93
The agricultural education teacher keeps the agricultural education program current to meet higher educational needs	3.86	0.79
Students are becoming more interested in enrolling in agricultural education courses.	3.27	0.85
Agricultural education teachers have positive professional relationships with guidance counselors.	3.82	0.73
The agricultural education teacher takes in-service courses, seminars, and other non-credit experiences beyond those required by our school.	3.79	0.92
Agricultural education teachers collaborate with other teachers to integrate other subjects into agricultural education courses.	3.3	0.93
Other teachers collaborate with agriculture teachers to integrate agricultural subjects into their courses.	2.82	0.89
Agricultural education teachers are more effective in their teaching than most other teachers.	2.48	0.77
Agricultural education teachers do not encourage college bound students to enroll in agricultural education courses.	2.02	0.86

Principals agreed that agriculture teachers use several resources in conducting their programs. Principals were knowledgeable of teachers' use of community members/resources; advisory committees; and inservice courses, seminars, etc. They also agreed that teachers keep agricultural education courses current to meet employment needs. They were uncertain, however, of the extent to which agriculture teachers cooperate with other teachers in integrating subject matter or that other teachers collaborate with agriculture teachers. Principals agreed that the agricultural education teacher in their school was a high quality teacher, but disagreed that they were more effective in their teaching than most other teachers.

Conclusions/Recommendations

Iowa high school principals are generally supportive of agricultural education programs, courses, and teachers. Not only do they believe that the agricultural education programs are important to their community, but they believe the agricultural education teacher does a good job of publicizing the benefits of the agricultural education program. Applying the theoretical framework established by Fishbein and Ajzen (1975) that was used to guide this study, principals are likely to translate this verbal support into their actions.

Principals' attitudes toward agriculture programs, courses, and teachers have apparently not been a factor in enrollment fluctuations in agricultural education programs. Based upon the reported positive attitudes of principals over the past three decades (Barnett, 1985; Dyer, 1994; Marrs, 1983; Matulis, 1989; Price, 1990; Pryor, 1984), principals' attitudes appear to have remained relatively constant.

Principals are knowledgeable of agricultural education programs and believe that these programs belong in high schools. Principals felt that technical schools or centers are not the appropriate place for agricultural education programs to be housed. However, principals continue to view agricultural education courses as vocational in nature. They believe the current focus of agricultural education coursework is toward the development of job skills, although there appears to be movement toward general rather than specific skills. These perceptions coincide with those cited in earlier research on principal attitudes toward "vocational" agriculture (Barnett, 1985; Marrs, 1983; Price, 1990; Pryor, 1984).

Principals believe that any high school student can benefit from agricultural coursework, no matter what their academic ability, location (technical schools/centers or high school), or geography (rural, urban, or suburban areas). Likewise, principals were undecided if other elective courses are more valuable to college bound students than are agricultural education courses, or about statements regarding the integration of either academic or agricultural education topics into other courses.

Principals believe that agriculture teachers are high quality teachers, and that students enjoy agricultural education classes. In addition, the professional relationship among teachers, guidance counselors, principals, and agricultural education teachers is perceived to be very good.

Principals generally agree that the agricultural education teacher: keeps the program current to meet higher educational needs; takes in-service courses, seminars, and other non-credit experiences beyond the school requirements; and agricultural education teachers encourage college bound students to enroll in their courses. This knowledge may account, at least in part, to the support offered to the agricultural education teachers.

Recommendations

As a result of the support from principals,

Iowa agriculture teachers may have an opportunity to shed the stigma of "vocational" education and benefit from administrative involvement toward curricular advances into highly technical and scientific areas. Conversely, agriculture teachers need to do more to educate principals about the need for course articulation.

Agricultural education teachers should continue to foster the current strong relationship with principals through collaborative activities, course integration, and continued involvement in the total school program.

Further research is needed to determine the following:

1. The influence of principal support on agricultural education programs. Clearly, some principals held very positive perceptions of agriculture programs whereas others did not. Are there tangible benefits to that support?

2. The attitudes of principals using a population of principals in schools both with and without agriculture classes and on a national scope. It is possible that schools that do not offer agriculture classes do not have administrative support to do so.

3. If the program is meeting the needs of stakeholders.

References

Andreasen, R. J., Breja, L. M., and Dyer, J. E. (1997). Attitudes of Iowa State University College of Agriculture Freshman Toward Agriculture Proceedings of the Annual National Agricultural Education Research Meeting. Las Vegas, NV.

Barnett, S. M. (1985). Secondary school principals' attitudes toward vocational education programs in Texas. Doctoral Dissertation, East Texas State University, Commerce, 1984.

Dyer, J. E. (1994). Attitudes and perceptions of Illinois secondary guidance counselors toward agriculture and agricultural education. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign.

Dyer, J. E., & Osborne, E. W. (1994, February). The influence of science-based agriculture courses on the attitudes of Illinois guidance counselors. Paper presented at the Central Region Agricultural Education Research Conference, St. Louis, MO.

Fishbein, M. and Ajzen, I. (1975). Beliefs, Attitudes, Intentions, and Behaviors. Reading, MA: Addison-Wesley Publishing Co.

Greenwald, A. G. (1989). Attitude structure and function. Hillsdale, NJ: Erlbaum Associates.

Iowa Department of Education. (1997). Directory of Secondarv and Postsecondarv Agricultural Education Departments 1997-98 and Directory of Secondary Departments by District. Des Moines, IA: Bureau of Technical and Vocational Education.

Krejcie, R. V. and Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement. 30, 607-610.

Krushat, W. M., & Molnar, J. I. (1993). The effect of nonrespondents on a self-administered mail survey. Evaluation-Practice, 14(1), 25-32.

Marrs, J. B. (1983). Principals' perceptions of vocational education in Tennessee. Doctoral Dissertation, University of Tennessee, Knoxville.

Matulis, J. K. (1989). Attitudes,

perceptions. and guidance practices of Illinois guidance directors concerning vocational education in secondary schools. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign.

National FFA Organization. (1986). Participation in selected FFA activities. Alexandria, VA: Author.

National Research Council (1988). Understanding Agriculture: New Directions for Education. Washington, D. C.: National Academy Press.

Price, L. E. (1990). Attitudes of school administrators in the southern region of the United States toward agricultural education. Doctoral Dissertation, North Carolina State University, Raleigh.

Pryor, W. D. (1984). A study of the attitudes of high school administrators, guidance counselors, and teachers in Nacogdoches county, Texas toward vocational education. Education Doctorate, East Texas State University, Commerce.