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THE STRATEGIC PLAN FOR AGRICULTURAL EDUCATION: AN ASSESSMENT IN PENNSYLVANIA

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Abstract

Numerous changes have occurred in agricultural education in an attempt to revitalize and revolutionize the way we teach agriculture. In this regard, the strategic planning process directed educators to move programs toward a more holistic view of the teaching of agriculture. The findings in this study indicate that teachers in Pennsylvania want to develop a strategic plan for the state. Moreover, the teachers indicated there should be a greater alliance of academics and agricultural education. The findings provide numerous opportunities and challenges for agricultural educators in Pennsylvania.

In 1993, a watershed document entitled A Nation at Risk confronted educators across the United States. This document has had an immense impact on education in public schools. It lashed out at the inadequacies of the present school system and emphasized the need to strengthen academic education in order that citizens of the United States be competitive in a global economy. Shortly thereafter, a committee was formulated to investigate the situation with regard to the teaching of agriculture in public schools. The document New Directions in Education (1988), analyzed and reported the impact that such requirements in academic education would have on agricultural education. It stressed the need to "revolutionize" agricultural education. This document pointed out many problems in the structure and format of agricultural education and then made recommendations for change.

The Strategic Plan for Agricultural Education (1989), a follow-up document to the 1988 report, responded by outlining the necessary changes that must be made if agricultural education was to remain in public schools. In this report, goals and resolutions were identified that the profession believed would make agricultural education competitive and relevant in the economy world. A challenge was issued by the committee that drafted the plan. Every state was encouraged to develop their own "strategic plan" following guidelines, goals, and resolutions of the national plan. The Strategic Plan document states that, "the challenge to the agricultural education profession ... is to develop a vision of agricultural education for the next decade that addresses technology, innovation, entrepreneurship, creativity, flexibility, and individual needs in agriculture" (1989, p. 3).

There has been little assessment of program initiatives and directions proposed in 1989 by the National Council for Agricultural Education. Zurbrick (1993) completed a six month assessment of the status of agricultural education in several western states. He sought to identify innovative and creative programs in agricultural education. He reported a "mixed bag" of findings. One state indicated doubling enrollment as a measure of progress. In another state, he found a school offering agriculture as a practical component to supplement academic education.

Nesbit (1992) conducted a descriptive study to examine the changes that have occurred in Idaho's secondary agricultural education programming. He reported that three years after the program change occurred, "most programs changed and enrollments increased" (Nesbit, 1992, p. 5).

Needs assessments attempt to go beyond reporting population numbers and program characteristics and is perceived as a valuable devise for program planning in all educational settings (Udinsky, Osterlind, & Lynch, 1981). Needs assessments can be effectively used to identify gaps between the current program and future program needs. Boyle (1981, p. 156) indicated the challenge and responsibility of the educator was to have a basis to determine what the present situation is and what it should be. Boyle's model indicated a framework for needs analysis showing how gaps represent needs as shown in Figure 1.

Kaufman and English (in Udinsky et al., 1981) indicate needs assessment can be useful for three reasons: (1) identify discrepancies between what is and what should be, (2) prioritizing an action list, and (3) help redesigning a curricula to meet needs. Since many believe that reality is constantly changing, there is an ongoing need to redefine goals and fulfill shifts in priorities in school settings. Popham (1998) further suggested that needs assessments can ameliorate needs by seeking to determine educational goals.

Paxton (1989) wrote that without a commission to study the needs of individual states and make recommendations, the agricultural education reform movement will be piecemeal, at best" (p. 7). At the National Summit on Agricultural Education, participants indicated the profession must determine its identity and purpose. It was believed the profession must meet the challenge of change by moving collectively through the strategic planning process (The Strategic Plan for Agricultural Education, 1989). Kaufman (1988) indicated educational planners have moved away from trying to modify instruction or curricula design to a more holistic approach to improve educational systems. Thus educators are beginning to look at devises such as strategic planning to help make a difference within educational systems. In Pennsylvania, a strategic planning committee was formed, but failed when the state supervisor resigned and there was "a lack of commitment and cohesiveness on part of the committee players" (B. Oswald, personal communication, November 11, 1993). Without a formal state-wide agricultural education strategic plan, questions surfaced regarding the effectiveness of agricultural teachers in adapting to a changing school and agriculture environment. Furthermore, questions regarding the impact of these "new directions" have occurred in the state. Have Pennsylvania agriculture teachers adopted *The Strategic Plan for Agricultural Education* (1989), or are teachers developing their own agenda? Have teachers implemented local plans, programs, and curricula that coincide with these national directives? Are there gaps in programming that need attention by state planners?

Purpose and Objectives

The primary purpose of this study was to identify and examine the perceptions held by Pennsylvania secondary school agriculture teachers regarding implementing recommendations from the National Research Council's Understanding Agriculture: New Directions for Education (1988) and the Strategic Plan for Agricultural Education

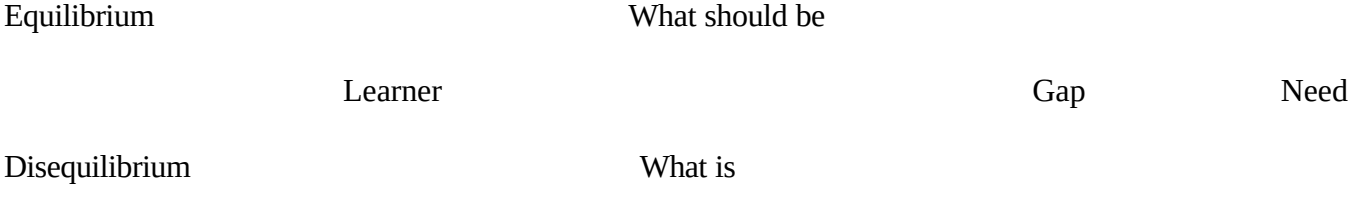

Figure 1. Framework for needs analysis (Boyle, 1981, p. 156).

(National Council for Agricultural Education, 1989). A second purpose was to describe the implications of these perceptions to the strategic program planning in Pennsylvania secondary schools.

The Objectives were to:

1) Identify the perceived need of Pennsylvania agriculture teachers regarding strategic planning goals.

2) Identify the perceived need of Pennsylvania agriculture teachers regarding National Summit Resolutions.

Procedure

Population and Sample

The target population for this study consisted of the 242 Pennsylvania secondary school experienced (more than one year of teaching) agriculture teachers listed in the 1993-1994 Directory for Agricultural Education in Pennsylvania. A random sample of 148 teachers was selected for the study (Krejcie & Morgan, 1970).

Instrumentation

The researchers developed an instrument to measure: (1) responses concerning the use and need for goals of the national plan; (2) responses concerning use and needs for the resolutions from the National Council for Agricultural Education; and, (3) responses on personal, demographic, and individual program characteristics. A five-point, Likert-type scale (1-5) was used to indicate the degree of agreement with the statement.

The questionnaire was reviewed for content and face validity by a team of experts in the Department of Agricultural and Extension Education of The Pennsylvania State University. The instrument was then pilot tested with a group of agriculture teachers (n = 16) at an inservice session to determine reliability. After making further refinements following the pilot test, Cronbach's alpha reliability ranged from .75 to .98.

Data Collection

A cover letter explaining the purposes of the study, a copy of the questionnaire, and a self-addressed prepaid return envelope were mailed to the sample. Three mailings were sent and a 70 percent response (103 returned questionnaires) was obtained. Non-response error was assessed using procedures recommended by Miller and Smith (1983). No significant differences ($p > .05$) were found between early and late respondents on the randomly selected variables measured in the demographics, strategic plan goals, and national summit resolutions sections of the instrument.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) at The Pennsylvania State University. Frequencies, percentages, and means were used to describe the data. Paired t-test was used to determine differences between the teachers' use of, and need for, goals of the national plan and the resolutions from the National Council for Agricultural Education.

Findings

Demographic Data

From the responses of 148 teachers, nine percent were female. The mean number of years of teaching was just under 17 years. More than half (61%) of the responding teachers had a master's degree or higher. Nearly half (49%) of the agriculture education programs were run by one teacher departments. Forty percent of the teachers

were members of the National Vocational Association of Teachers of Agriculture (NVATA).

Program enrollment by gender reveals that males make up over two thirds, (72%), of the student population. More than half (59%) of the students enrolled in Pennsylvania secondary school agricultural education programs were from a town and/or urban setting. The smaller portion of students were from farms and/or rural places.

Responses to the Strategic Plan Goals

As shown in Table 1, strategic plan goals the teachers of Pennsylvania perceive as the greatest need for change (gap .91) was "closing the gap between agricultural education and academic education." Teachers supported the need to have a stronger academic preparation of youth by indicating that programs need to close the gap between academic and vocational preparation. Second and very closely linked are the statements that indicate the need to develop partnerships with other departments in the school system.

In a series of responses, teachers indicated that a gap existed between historical school relationships (social studies (gap .90), English (gap .87), mathematics (gap .87), and science (gap .72)) and the need for more partnerships in this setting (gap .59). Teachers also indicated a need to respond to the market place trends (gap .48) in a slightly greater way than marketplace demands (gap .46). Furthermore, teachers indicated the need to enhance curricula about agriculture (gap .47) was greater than the need to create new curricula in agriculture (gap .41) or for enhanced curricula in agriculture (gap .34).

Respondents indicated a need to continue to develop the "whole person" development of personal skills (gap .35) and leadership (gap .19). Teachers in this study indicated teaching leadership to be important but indicated little need for additional instruction in this area (gap .18). Teachers further indicated that little improvement is needed in the area of discrimination (gap .17) and equality (gap .16). Formal instruction (gap -.01) and free enterprise education (gap .15) were not perceived as much of a need of respondents.

Responses to the National Summit Resolutions

The greatest gap in the resolutions section of the questionnaire occurs with the need to "develop a statewide plan" (gap 1.28). As shown in Table 2, closely related to the need to have a state plan is the need to promote trust through communication (gap 1.23). Beyond the need to promote trust through communication, respondents indicated being united (gap 1.18) and synergy (gap 1.17) were needed components of agricultural education programs. Furthermore, teachers agreed that financial support of effective marketing is a need that existed (gap 1.05). Teachers also showed their agreement in the need for an accountability plan (gap 1.0), with regular reviews (gap .94), and the focus should be placed on long-term outcomes (gap .98). Teachers also agreed with the concept of having high expectations for student excellence (gap .90), relationships should be expanded with the agricultural industry (gap .87), and state-wide teamwork (gap .86) should exist within the profession.

To some extent, teachers indicated Pennsylvania Department of Education (gap .83) and Pennsylvania State University (gap .82) should be a involved in state-wide planning. Teachers indicated that relationships should be expanded between agricultural education and business (gap .72), the community (gap .70) and the teaching of production agriculture (gap .70). To a lesser extent, teachers indicated the Pennsylvania Vocational Agriculture Teachers Association (PVATA) should coordinate national initiatives (gap .64). Teachers indicated some need to align program agendas (gap .60) and to promote life-long learning (gap .45). Teachers also indicated that leadership needs to be expanded at the state level

Table 1. Comparison of Mean Scores of in the Past and Need Statement Perceptions Toward the Strategic Plan

Goal Statement	n	Used Mean (SD)	Need Mean (SD)	gap	t-value
Close the gap: agricultural education and academic education.	96	3.55 (.99)	4.46 (.79)	.91	-7.74**
Cultivate partnerships: social studies department.	96	2.53 (1.02)	3.43 (.94)	.90	-6.92**
Cultivate partnerships: English department.	94	2.89 (1.16)	3.76 (.98)	.87	-6.47**
Cultivate partnerships: mathematics department.	95	3.11 (1.13)	3.94 (.98)	.83	-6.91**
Cultivate partnerships: science department.	95	3.55 (1.17)	4.27 (.97)	.72	-4.86**
Create new curricula about agriculture	94	3.52 (1.07)	4.18 (.83)	.66	-5.35**
Cultivate partnerships: total educational system.	96	3.54 (1.00)	4.13 (.81)	.59	-5.38**
Respond: marketplace trends.	95	3.68 (.93)	4.16 (.80)	.48	-4.35**
Enhance curricula about agriculture.	91	3.74 (.96)	4.21 (.85)	.47	-4.14**
Respond: marketplace demands.	95	3.87 (.88)	4.33 (.78)	.46	-4.33**
Create new curricula in agriculture	93	3.73 (.99)	4.14 (.92)	.41	-3.39*
Advocate entrepreneurship education.	93	3.55 (.89)	3.90 (.97)	.40	-3.23*
Amplify the “whole person” concept: personal skills	95	3.84 (.84)	4.19 (.89)	.35	-3.47*
Teaching: personal development.	95	4.15 (.81)	4.49 (.76)	.34	-3.64**
Enhance curricula in agriculture.	94	3.93 (.91)	4.27 (.86)	.34	-3.30*
Amplify the “whole person” concept: leadership skills.	94	4.21 (.77)	4.40 (.82)	.19	-2.02*
Teaching: leadership development.	93	4.27 (.87)	4.45 (.76)	.18	-1.94
Serve all individuals equally without discrimination.	95	4.27 (.92)	4.44 (.81)	.17	-1.54
Serve all groups equally.	93	4.27 (.91)	4.43 (.79)	.16	-1.53
Advocate free enterprise education.	92	3.62 (.98)	3.77 (.93)	.15	-1.41
Teaching: formal instruction.	94	4.07 (.87)	4.06 (.88)	-.01	.12

Scale: Used: 1 = Never 2 = Rarely 3 = Sometimes 4 = Usually 5 = Consistently
Need: 1 = Not needed, 2 = Not much needed, 3 = Moderately needed, 4 = Much needed, 5 = Very much needed

* alpha < .05 ** alpha < .001

Table 2. Comparison of Mean Scores of in the Past and Need Statement Perceptions Toward the National Summit Resolutions

Goal Statement	n	Used Mean (SD)	Need Mean (SD)	gap	t-value
Develop a statewide plan.	95	2.77 (1.13)	4.05 (1.12)	1.28	-9.68**
Promote trust through communication.	92	3.13 (1.04)	4.36 (.75)	1.23	-9.85**
Move towards being united.	93	3.02 (1.13)	4.20 (.99)	1.18	-9.18**
Promote synergy statewide	94	3.00 (1.04)	4.17 (.89)	1.17	-9.27**
Seek financial support/effective marketing.	94	3.24 (.91)	4.29 (.73)	1.05	-11.05**
Develop a program accountability plan.	95	3.12 (1.00)	4.12 (.92)	1.00	-8.23**
Focus on desired long-term outcomes.	94	3.32 (1.01)	4.30 (.80)	.98	-8.50**
Regularly review our mission making course corrections.	95	3.35 (1.09)	4.29 (.74)	.94	-8.75**
Pursue the national mission with high expectations for excellence.	93	3.25 (.94)	4.15 (.94)	.90	-8.61**
Expand relationships between agricultural education and industry.	95	3.57 (.91)	4.44 (.71)	.87	-9.32**
Promote teamwork statewide	96	3.23 (1.08)	4.09 (.93)	.86	-7.50**
Have the PDE be responsible for statewide programming.	89	2.73 (.90)	3.56 (1.32)	.83	-5.36**
Charge Penn State University implement a statewide plan.	90	2.54 (1.05)	3.36 (1.41)	.82	-5.21**
Expand the relationship: school agriculture and private business.	96	3.74 (.84)	4.46 (.79)	.72	-7.18**
Expand the network of relationships: ag. ed. and the community.	96	3.75 (.87)	4.45 (.71)	.70	-6.94**
Expand program delivery: teaching production agriculture.	94	3.34 (1.04)	4.04 (1.00)	.70	-5.60**
Have the PVATA coordinate national directives in Pennsylvania.	91	2.71 (.95)	3.35 (1.32)	.64	-5.04**
Align program agendas: single overarching mission.	94	3.24 (1.02)	3.84 (1.00)	.60	-4.73**
Promote life-long learning.	97	4.06 (.97)	4.51 (.77)	.45	-4.51**
Expand leadership at the state level.	90	3.26 (.99)	3.48 (1.33)	.22	-1.35
Promote linkages with the past.	85	3.20 (.91)	2.48 (.93)	-.72	5.38**

Scale: Used: 1 = Never 2 = Rarely 3 = Sometimes 4 = Usually 5 = Consistently
Need: 1 = Not needed, 2 = Not much needed, 3 = Moderately needed, 4 = Much needed, 5 = Very much needed

* alpha < .05 ** alpha < .001

(gap .22). Teachers indicated not much need existed to promote linkages with the past (gap -.72).

Conclusions

Based on the findings derived from the responses of secondary school agriculture teachers in Pennsylvania, the following conclusions were drawn.

1. There is a perceived need for change in Pennsylvania's secondary school agricultural education programs.

2. Teachers in the secondary school agriculture departments of Pennsylvania have indicated that nearly all areas of the Goals of the Strategic Plan and the Resolutions of the National Committee were either moderately needed or much needed.

3. Agricultural teachers in Pennsylvania indicated they need to work towards cultivating partnerships with other secondary school departments. The science department was the area of greatest potential collaboration.

4. Teachers perceived the need to develop more and better partnerships with other school departments. Social studies ranked highest among these partnerships that needed to be developed.

5. The area of the Strategic Plan that Pennsylvania secondary agriculture teachers perceived as the greatest need for change is in closing the gap between agricultural education and academic education.

6. Secondly and closely related to closing the gap between agricultural and academic education is the need to cultivate partnerships in the school environment.

7. The areas of greatest need in the Resolutions of the National Committee was to have a statewide plan.

8. Secondary to needing a statewide plan, but related, was the need to work together, develop trust and communication, and better market agricultural education for funding and promotional purposes.

Implications

There is much talk in the educational circles regarding the need for integration of academic and vocational or applied curricula. Along with the need for integration is the need for increased educational relevance. Agriculture teachers in this study indicated there is a need for both. Teachers in this study see the need for improvement of students' academic skills. Moreover, if agricultural teachers see the benefits of curriculum integration, this could be a positive first-step toward cooperation between various curricula strands.

Teachers in this study feel the need for a state-wide plan for agricultural education. Without such a plan the teachers may perceive they are vulnerable and at-risk. This state-wide plan should be built on a foundation where there is commitment to the process, a strategy where all groups communicate openly and with trust and there is support from the industry and stakeholders. Further, there must be an ongoing communication in the formation and implementation of the plan. Excellence must accompany all aspects of the process, and a plan of accountability must be built into the structure. To support the plan, teachers indicated an emphasis must exist on academic education, working together with other school departments and making sure the programs responds to needs in the marketplace. The potential outcomes for the implementation of a state-wide plan are good if all groups can make a commitment to this process.

Teachers don't see themselves discriminating between groups. While ethnicity was not a focus of this study, more than 90 percent of the population of this study was male and Pennsylvania's agricultural student population does not match its diverse state population. This is a problem that further augments the need for ethnic sensitivity education and diversity recruitment, since many studies indicate a overwhelming white-male majority in agriculture (Bowen, 1993). However, the fact that teachers don't see the need for additional leadership training makes sense considering the vast amount of time many teachers report spending on this activity. Furthermore, teachers in this study appear to be willing to make a clean break with the past. This finding could have wide implications as planners attempt to develop a contemporary image of the various elements of agricultural education.

Recommendations

Based on the literature reviewed on the findings and conclusions of the study, and the researchers' experiences, the following recommendations were made:

1. A Pennsylvania state-wide strategic plan for secondary agricultural education should be initiated without hesitation.

2. Teacher education institutions, the Pennsylvania Department of Education, the Pennsylvania Vocational Agriculture Teachers Association, and the teachers should work cooperatively together to develop a statewide plan.

3. Teacher education programs, both preservice and inservice, should respond to these needs and provide educational programs that center on closing the gap between academic and agricultural education and provide educational programs on cultivating partnerships with other school disciplines and departments.

4. Diversity education should be integrated across the discipline to increase sensitivity and improve attitudes toward undeserved populations.

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