

ATTITUDES OF AGRISCIENCE TEACHERS IN MICHIGAN TOWARD INTERNATIONALIZING AGRICULTURAL EDUCATION PROGRAMS

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Introduction

The National Council for Agricultural Education has initiated a national program related to international education in agriculture that has potential to involve agricultural educators at all levels. Beeman and Cheek (1990) emphasized the importance of global involvement in agricultural education programs. They pointed out several personal and programmatic benefits to be gained from participating in international experiences, such as increased interest on behalf of faculty in international education; broadening experiences, trade, and the opportunity for learning new cultures; innovative educational programs; and different governmental structures. Symons and Cvancara (1990) asserted that the rationale for integrating international concepts into secondary agricultural education programs is rooted in the changes taking place in high schools, the global economy, and the students themselves. They acknowledged that the curricula in many schools lack an international component.

In 1989, Michigan and California were selected by the National Council for Agricultural Education to provide national leadership for internationalizing agricultural education programs in the United States. Before this selection, agricultural education faculty and staff

(Moore, Stockil, and Williams) at Michigan State University had spent a year developing and field testing an instructional manual titled, "Internationalizing Agricultural Education Programs" (IAEP). The project staff believed that making the curriculum more internationally focused was not just the responsibility of professionals in liberal arts. In fact, they believed that the agricultural education profession had a responsibility to add a global perspective to the curriculum regarding world agriculture. Considering that this initiative was not a priority of personnel in the Michigan Department of Education, the program staff made teacher involvement in planning, pilot testing, an disseminating of IAEP materials a major focus of the international programming thrust. Simply stated, staff were fully aware that the success of this effort depended on the support and acceptance of the agriscience teachers.

In 1990, because 52% of the agriscience teachers had used the IAEP instructional manual for about one year, faculty at Michigan State University were interested in knowing whether the teachers who had received the IAEP instructional manual had different attitudes toward how to make their curriculum more internationally focused than teachers who had not received the IAEP curriculum. This interest created the need for an in-depth analysis of the attitudes of agriscience

teachers regarding Michigan's international thrusts.

Purposes and Objectives

The major purposes of this study were to examine the attitudes of Michigan agriscience teachers toward various aspects of making their curriculum more internationally focused, and to examine the differences in attitudes between Michigan agriscience teachers who received the IAEP instructional materials and teachers who did not receive the materials. To accomplish the major purposes of the study, the following specific objectives were developed: 1) to describe the attitudes of agriscience teachers in Michigan toward student-related aspects, teacher-related aspects, and educational linkages of making their curriculum more internationally focused; 2) to examine selected demographic characteristics of agriscience teachers in Michigan; 3) to determine the differences in attitudes of agriscience teachers toward making their curriculum more internationally focused, based on the teachers' demographic characteristics; 4) to describe the attitudes of Michigan agriscience teachers who received the IAEP instructional materials and those who did not receive the materials toward making their curriculum more internationally focused; and 5) to examine the differences in attitudes between Michigan agriscience teachers who received the IAEP instructional material and those who did not receive the materials.

Methodology

The design of this study was descriptive survey research. An instrument consisting of two sections was used to collect data. The first section of the instrument contained statements concerning three aspects of internationalizing the agricultural education curriculum: student-related aspects, teacher-related aspects, and educational linkages. The respondents indicated their attitudes about each of the statements on a 5-point Likert-type attitudinal scale, ranging from 1 (Strongly Unfavorable) to 5 (Strongly Favorable). Edward's (1957) informal criteria for constructing attitude statements were used as the basis for developing the items relating to each aspect concerning teachers making their curriculum more internationally focused. The second section of the instrument contained items concerning personal characteristics of the

respondents, including age, education, years of teaching experience, membership in professional societies/organizations, cosmopolitanism, reading the Agricultural Education Magazine, receiving IAEP instructional materials for internationalizing agricultural education programs, reading newspapers for agricultural information, residence, mobility, participation in national and international seminars/conferences, and primary teaching area.

The content validity of the instrument was established by a jury of experts. Because all of the secondary school agriscience teachers in Michigan were included in the study, the researchers used eight retired agriscience teachers, eight graduate students who were agricultural teachers before being admitted for graduate study in the Department of Agricultural and Extension Education, and one FFA specialist in the department for the pilot-testing of the instrument. The reliability of the instrument was calculated on the basis of items addressing student-related aspects, teacher-related aspects, and educational linkages of teachers making their curriculum more internationally focused. The reliability coefficients for the three components were .91, .93, and .94, respectively. The item discrimination index analysis was calculated by correlating item scores with total scale scores. The final version of the instrument was revised. The study population received an instrument which contained 34 student-related statements, 28 teacher-related statements, and 29 statements on educational linkages.

The target population for the study consisted of all 168 secondary school agriscience teachers in Michigan who were teaching in 1991. The accessible population was 160. Data were collected by mail questionnaire during April 30, 1991 to June 10, 1991 and resulted in a 88 percent response rate. Early and late respondents' responses were compared and no significant difference was found between the early and late respondents.

Descriptive statistics were used to summarize the data pertaining to the personal characteristics of the respondents. Frequency counts and percentages, as well as means and standard deviations, were calculated for the descriptive data. T-tests and analysis of variance (ANOVA) were used to determine whether there were significant differences between and among

groups of agricultural teachers with regard to their attitudes toward internationalizing among groups of agricultural teachers with regard to their attitudes toward internationalizing their curriculum. Tukey's multiple-range test was employed to isolate the source of significant differences. Throughout the study, a .05 probability level was used as the basis for rejecting the null hypotheses.

Study Findings

Demographic Characteristics of Respondents

The data in Table 1 indicate that fifty-six percent of the respondents were 40 years old or younger. Forty-two percent of them had a bachelor's degree or less, and nearly seventy percent had 10 years or more of teaching experience. Sixty-three percent of them primarily taught agriscience and natural resources (41%) and horticulture (22%). Most of the participants belonged to professional societies, through which they can receive information about new ideas pertaining to internationalizing the agricultural education curriculum. Thirty-two percent of the respondents belonged to four societies/organizations, and 31% belonged to fewer than four.

The largest proportion (70%) of respondents had medium cosmopolitanism. Seventy percent of the respondents lived in rural areas and a majority of respondents were not geographically mobile. Forty-one percent of them had never changed their residences during the past 10 years.

The majority (77%) of teachers in this study read the Agricultural Education Magazine. About 35% of them read two to five issues during 1990-91, and another 28% read six to nine issues that year. Almost half (48%) of the respondents had not received any IAEP instructional materials on making their curriculum more internationally focused. Only 52% of them had received such materials considering that this effort was not a priority of the Michigan Department of Education. Additionally, other Department of Education statewide programming thrusts were promoted when the IAEP materials were disseminated.

Significant Differences in Attitudes, Based on Demographic Characteristics

The null hypothesis stated that: There is no statistically significant difference in the attitudes of Michigan agriscience teachers toward making their curriculum more internationally focused, when grouped by different demographic characteristics. When scores of attitudinal variables were grouped by reading the Agricultural Education Magazine and newspapers for agricultural information, statistically significant differences were found in attitudes toward making the curriculum more internationally focused (see Table 2).

As indicated in Table 3, when grouped by age, education, teaching experience, and residence, no statistical significant differences were found in attitudinal variables. When grouped by membership in professional societies, cosmopolitanism, participation in national seminars, and primary teaching areas, the respondents had statistical significant differences in attitudes toward making their curriculum more internationally focused (see Table 3).

It is worthwhile to mention that the difference found in the T-test and one-way analysis of variance were not between favorable and unfavorable. The differences were found between less favorable to more favorable attitudes toward this program.

Attitudes Toward Student-Related Aspects

The majority (92%) of agriscience teachers had favorable and highly favorable attitudes toward student-related aspects of making their curriculum more internationally focused. That is, they agreed that the students should understand (a) the basic geography of the state, nation, and world; (b) global agriculture and its effect on U.S. agriculture; (c) future changes in global agriculture; (d) interactions with people from other countries; (e) international marketing

Table 1

Demographic Characteristics of Michigan Agriscience Teachers

Demographic Characteristics	Number	Percent	Demographic Characteristics	Number	Percent
Age:			Education:		
25-30 years old	23	16	Bachelor's degree or less	60	
31-40 years old	56	40	Master's degree	47	34
41-50 years old	41	29	More than Master's	34	24
51-60 years old	21	15			
Teaching Experience:			Membership in Prof. Societies:		
Fewer than 6 years	27	19	< 4 societies	42	31
6 - 9 years	17	12	4 societies	43	32
10-13 years	27	19	5 societies	28	21
14 years or more	70	50	> 5 societies	23	17
Cosmopolitanism:			Residence:		
Low cosmopoli.	23	16	Rural farm	63	45
Medium cosmopoli.	99	70	Rural nonfarm	35	25
High cosmopoli.	19	14	Suburban	30	21
			Urban	13	9
Read Ag. Educ. Magazine:			Mobility:		
No	32	23	Never changed	58	41
Yes	109	77	1 time	40	28
Issues of Ag. Educ. Magazine Read:			2-3 times	21	15
< 2 issues	13	12	4 or more times	22	16
2 - 5 issues	38	35	Participation in National Seminars:		
6 - 9 issues	31	28	Fewer than 2 seminars	65	46
10 or more issues	27	25	2-5 seminars	37	26
Read Newspapers for Ag. Information:			6-9 seminars	14	10
No	31	22	10-13 seminars	13	9
Yes	110	78	14 or more seminars	12	9
Primary Teaching Area:			Participation in Inter-National Seminars:		
Agriscience & NR	58	41	< 2 Seminars	115	82
Horticulture	30	22	2 or more Seminars	26	18
Agri-Mechanics	18	13	Received IAEP Materials:		
Agri-Production	19	14	No	67	48
Others)Bio/(Sci.)	16	11	Yes	74	52

Table 2

T-test Results of Agriscience Teachers Pertaining to Attitude Variable

Variable	Mean	T-value	Two-Tailed Probability
<u>Read Ag. Educ. Magazine:</u>			
No	3.79		
Yes	3.69	-1.96	.05*
<u>Read Newspapers for Ag. Information</u>			
No	3.77		
Yes	3.96	-2.17	.03*

Note. Means were calculated on the basis of a five-point Likert-scale 1=Strongly Unfavorable, 2=Unfavorable, 3=Neutral, 4=Favorable, 5=Strongly Favorable

*Significant at a $\leq .05$

systems; (f) the culture, infrastructure, standard of living, economy, politics, and natural resources of other countries; (g) global perspectives with respect to career opportunities; and (h) international interdependency.

Attitudes Toward Teacher-Related Aspects

The largest proportion (70%) of Michigan agriscience teachers had favorable and highly favorable attitudes toward teacher-related aspects of making their curriculum more internationally focused. This indicates that the IAEP program had been helpful to agriscience teachers in increasing global awareness in agricultural education. They indicated it was a worthy effort, which helped them improve working relationships with others, and they agreed to continue supporting the program. Respondents also were interested in having their FFA chapters host students from other countries, in serving on an advisory committee, and in participating in an overseas study tour. They also thought agriscience teachers needed in-service training and that successful agriscience teachers should be recognized by the Michigan Department of Education, the local school district, and the Michigan Association of Agriscience Teachers for their international efforts.

Attitudes Toward Educational Linkages

Eighty percent of the respondents had favorable and highly favorable attitudes toward educational linkages of making their curriculum more internationally focused. They indicated that internationalizing the agricultural education curriculum should be a priority of the Michigan Department of Education, the Vocational-Technical Education Service, local school districts, and the Agricultural and Extension Education Department at MS. They believed that IAEP programs should maintain linkages with the international efforts of the United States Department of Agriculture, Michigan Department of Agriculture, and the private sector. They also believed that international education should be integrated into the curriculum of schools, colleges, and universities.

Overall, Michigan agriscience teachers (84%) had favorable attitudes toward the international agricultural program thrusts.

Attitudes of Agriscience Teachers Who Received the IAEP Instructional Materials and Those Who Did Not

Student-related aspects. Means and standard deviations were calculated for each statement. On all but one statement, "Through IAEP, students will have an opportunity to interact

Table 3

Means, F-values, and Significant of F-values Pertaining to Attitude Variable

Variables	Mean	F-value	Signif of F
<u>Age:</u>			
25-30 years old	3.93	2.47	.06
31-40 years old	4.01		
41-50 years old	3.87		
51-60 years old	3.74		
<u>Education:</u>			
Bachelor's or less	3.89	.83	.44
Master's degree	3.98		
More than Master's	3.87		
<u>Teaching Experience:</u>			
Fewer than 6 years	3.86	.95	.41
6-9 years	4.04		
10-13 years	3.98		
14 years or more	3.89		
<u>Membership in Professional Societies:</u>			
<4 societies	3.80	2.54	.05*
4 societies	3.91		
5 societies	3.98		
>5 societies	4.09		
<u>Cosmopolitanism:</u>			
0 - 6 scores	3.66	6.05	.003*
7 - 12 scores	3.95		
13-18 scores	4.08		
<u>Residence:</u>			
Rural farm	3.84	1.39	.24
Rural nonfarm	3.95		
Suburban	3.99		
Urban	4.05		
<u>Participation in National Seminars:</u>			
Fewer than 2	3.78	3.96	.00*
2 to 5 seminars	4.06		
6 to 9 seminars	3.94		
10 to 13 seminars	3.90		
14 or more	4.16		
<u>Primary Teaching Areas:</u>			
Agriscience & NR	4.00	2.53	.05*
Horticulture	3.95		
Agri-Mechanics	3.88		
Agri-Production	3.66		
Others(Bio./Sci.)	3.89		

Note. Means were calculated on the basis of a five-point Likert-scale 1=Strongly Unfavorable, 2=Unfavorable, 3=Neutral, 4=Favorable, 5=Strongly Favorable.

*Significant at a $\leq .05$

with people in other parts of the world" (mean = 3.29), the mean ratings by agriscience-science teachers who received the IAEP instructional materials ranged from 3.70 to 4.54, and the mean ratings by agriscience teachers who did not receive the materials ranged from 3.59 to 4.56, indicating favorable attitudes toward making their curriculum more internationalized.

Teacher-related aspects. The mean ratings by agriscience teachers who received the IAEP instructional materials for five of the teacher-related statements ranged from 3.09 to 3.46, indicating neutral attitudes. The mean ratings of the other 23 statements ranged from 3.50 to 4.32, indicating favorable attitudes toward these teacher-related aspects of making the curriculum more international. The mean ratings by agriscience teachers who did not receive the IAEP instructional materials on nine teacher-related statements ranged from 3.02 to 3.47, indicating neutral attitudes. The mean ratings for the other 19 statements ranged from 3.50 to 4.10, indicating favorable attitudes toward these teacher-related aspects of internationalizing their curriculum. Thus, a majority of both the agriscience teachers who received the IAEP instructional materials and those who did not receive the materials expressed favorable attitudes toward teacher-related aspects of making their curriculum more internationally focused.

Educational Linkages. Means and standard deviations were calculated for each statement. All of the mean ratings by agriscience teachers who received the IAEP instructional materials and those who did not receive the materials ranged from 3.62 to 4.22 except the mean rating for the statement, "Local global educational/international understanding initiatives should be funded by the local school districts" (mean = 3.40). Thus, the agriscience teachers who received the IAEP instructional materials and those who did not receive the materials showed favorable attitudes toward all but one of the statements relative to educational linkages of internationalizing their curriculum.

Significant Differences in Attitudes Between Teachers Who Received and Did Not Receive the IAEP Instructional Materials

The null hypothesis stated that: There is no statistically significant difference in the attitudes of Michigan agriscience teachers who received the IAEP instructional materials and those who

did not receive the materials toward student-related aspects, teacher-related aspects, and educational linkages of making their curriculum more internationally focused.

Significant differences were found between the two groups in their responses to statements concerning their attitudes toward:

1. Students' participation in national FFA international programs.
2. Students' opportunity to interact with people from other countries.
3. The necessity of in-service training to help teachers internationalize their programs.
4. The provision of selected reading materials to help teachers internationalize the curriculum.
5. The encouragement of students' participation in national FFA international programs.
6. Interest in having their FFA chapter serve as host chapter for students from other countries for 3 weeks.

In essence, teachers who received the IAEP instructional materials had significantly more favorable attitudes toward these items than did teachers who had not received the materials.

Conclusions

Overall, agriscience teachers in Michigan demonstrated favorable attitudes toward making their curriculum more internationally focused. Thus, program planners involved in making secondary schools' curriculum more internationally focused should continue to involve (planning, in-service training, dissemination, evaluation) agriscience teachers in this endeavor. Younger respondents expressed more favorable attitudes than did older teachers. Hence, younger teachers might be given leadership roles in this programming thrust. Half of the respondents had more than 14 years of teaching experience, and these teachers had favorable attitudes toward making the agricultural education curriculum more

Table 4

Means, Standard Deviations and T- values on Student-Related Attitudinal Statements for Agriscience Teachers Who Received Instructional Materials for IAEP and Those Who Did Not Receive Such Materials

Statements	Received Materials		Did Not Receive		T- Value
	Mean	SD	Mean	SD	
1. For secondary students to understand global agriculture, they should first have a basic understanding of geography as related to their state, such as:					
a. Location of county on a state map.	4.48	.72	4.48	.74	.05
b. Location of county on a state map.	4.54	.60	4.56	.63	.26
c. Identification of major cities in the state where large quantities of agricultural products are consumed.	4.46	.57	4.39	.69	.67
d. Location of major ports for shipping agricultural products.	4.42	.61	4.21	.70	1.88
2. To help students understand agriculture from a global perspective, they should have a basic understanding of the United States and world geography, such as:					
a. Major regions in the United States.	4.47	.64	4.49	.50	.20
b. Location of states in major regions in the United States.	4.35	.53	4.43	.60	.85
c. The seven continents in the world.	4.33	.62	4.17	.79	.05
d. Location of countries in the world.	4.34	.61	4.22	.69	.10
e. Major oceans used in shipping agricultural products.	4.25	.64	4.17	.79	.64
f. Countries that are the most densely populated.	4.33	.62	4.28	.64	.28
3. International agricultural education programs will increase students' awareness of the need for the United States to work closely with countries around the world for:					
a. Economic benefits.	4.17	.66	4.19	.72	.16
b. Political benefits.	3.92	.75	3.84	.77	.65
c. Humanitarian benefits.	4.10	.75	4.08	.66	.15
4. Students are more likely to understand global agriculture if they are given instruction about:					
a. Major agricultural products that are produced in their county.	4.22	.78	4.22	.69	.05
b. What happens to local products once they leave the community.	4.36	.58	4.26	.68	.90
c. Major agricultural products that are produced in Michigan.	4.37	.63	4.28	.62	.89
d. Major export markets for Michigan agricultural products.	4.24	.54	4.25	.68	.84
e. States in the U.S. that are competing with Michigan's major agricultural products.	4.21	.72	4.17	.71	.30
f. Other countries that are competing with Michigan's major agricultural products.	4.34	.65	4.29	.62	.49
g. Countries that need and are capable of purchasing Michigan's major agricultural products.	4.33	.62	4.30	.67	.32
5. IAEP will increase awareness of global agriculture and the effects on American agriculture.	4.07	.70	4.07	.74	.06
6. With proper instruction and materials, students will be able to understand basic international agricultural concepts.	4.17	.55	4.04	.72	1.21

Table 4 (continued)

Means, Standard Deviations and T- values on Student-Related Attitudinal Statements for Agriscience Teachers Who Received Instructional Materials for IAEP and Those Who Did Not Receive Such Materials

Statements	Received Materials		Did Not Receive		T- Value
	Mean	SD	Mean	SD	
7. Considering the countries that are projected to be the best markets for Michigan's major products, students should be instructed on those countries':					
a. Culture.	3.72	.78	3.70	.93	.19
b. Infrastructure (educational systems, transportation system, major industries, etc.).	3.70	.71	3.59	.93	.76
c. Standard of living.	3.97	.70	3.79	.86	.05
d. Natural resources	4.00	.61	3.98	.75	.13
8. IAEP will provide students with a global perspective with respect to career opportunities.	3.82	.62	3.79	.66	.31
9. Students should be encouraged to participate in the various national FFA international programs (World Agriscience Studies, Work Experience Abroad, Travel Seminars, etc.).	4.00	.64	3.75	.91	1.93*
10. Basic IAEP concepts are not too complex for the average agriscience students.	3.86	.78	3.59	.90	1.88
11. IAEP will provide students with an appreciation of the interdependency of nations around the world.	3.84	.72	3.70	.75	1.09
12. IAEP will prepare students for future changes in global agriculture.	3.72	.80	3.79	.68	.59
13. Through IAEP, students will have an opportunity to interact with people in other parts of the world.	3.29	.90	3.59	.71	2.17*
14. IAEP will help students understand global agricultural marketing systems.	3.89	.58	3.85	.82	.34
15. IAEP will help students function better as citizens in a global society.	3.86	.64	3.81	.80	.48

Note. Means were calculated on the basis of a five point Likert-scale 1=Strongly Unfavorable, 2=Unfavorable, 3=Neutral, 4=Favorable, 5=Strongly Favorable.

*Significant at a $\leq .05$.

Table 5

Means, Standard Deviations, and T- values on Teacher-Related Attitudinal Statements for Agriscience Teachers Who Received the IAEP Instructional Materials Those Who Did Not Receive Materials

Statements	Received Materials		Did Not Receive		T- Value
	Mean	SD	Mean	SD	
1. I see IAEP efforts as benefiting me personally.	3.70	.99	3.59	.79	.69
2. Internationalizing my agriscience program will help in:					
a. Strengthening the program.	3.50	.94	3.53	.78	.25
b. Improving my working relationship with other school personnel.			3.33	.89	
c. Creating a better relationship with the agricultural community.	3.46	.83	3.47	.68	.14
d. Recruiting additional students.	3.09	.93	3.14	.92	.35
3. IAEP should be given a high priority because US agriculture will benefit from it.	3.58	.92	3.44	.87	.88
4. IAEP addresses the issue of a growing international interdependence in the area of agriculture.	3.87	.72	3.77	.75	.76
5. Ag teachers need in-service training to internationalize their programs.	4.02	.97	4.10	.90	.49
6. I would be interested in attending an in-service training session on how to internationalize my program.	3.98	1.01	3.76	1.08	.74
7. Agriscience teachers who have received in-service training on how to internationalize agriscience programs are likely to be more successful in this integration effort than teachers who have not had such training.	4.31	.57	4.05	.90	1.99*
8. For teachers to understand global agriculture, they should be given selected reading materials that they can easily use in the classroom.	4.32	.70	4.00	.67	2.79*
9. Internationalizing my program is worth the effort.	3.87	.93	3.73	.76	.99
10. I am very supportive of the initiative to internationalize agriscience programs in Michigan.	3.94	.85	3.75	.76	1.45
11. MS's Department of Agricultural and Extension Education should provide resources to support the infusion of an international dimension into agriscience programs.	4.00	.87	3.78	.96	1.44
12. I would encourage my students to participate in national FFA's international programs.	4.02	.75	3.61	.99	2.79*
13. I would be interested in having my FFA chapter serve as a host chapter for a student from another country for:					
a. 3 weeks	3.71	.81	3.33	1.03	2.38*
b. 6 weeks	3.18	.83	3.20	1.00	.13
14. I wish to increase my understanding of global agriculture by participating in a planned overseas study tour.	3.63	1.11	3.32	1.10	1.88
15. Agriscience teachers who have been successful in internationalizing their programs should be recognized by:					
a. The Michigan Department of Education.	3.90	.99	3.85	1.00	.32
b. The local school district.	3.82	.98	3.88	.96	.34
c. The Michigan Association of Agriscience Educators.	4.02	.97	3.94	.90	.55
16. A well-implemented IAEP will improve the image of the agriscience teacher.	3.78	.66	3.79	.82	1.04

Table 5 (continued)

Means, Standard Deviations, and T- values on Teacher-Related Attitudinal Statements for Agriscience Teachers Who Received the IAEP Instructional Materials Those Who Did Not Receive Materials

Statements	<u>Received Materials</u>		<u>Did Not Receive</u>		<u>T- Value</u>
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	
17. If statewide IAEP efforts are to be successful, agriscience teachers should be directly involved in:					
a. Planning statewide programs.	4.00	.66	3.89	.81	1.66
b. Implementing statewide programs.	3.97	.59	3.76	.83	1.74
c. Evaluating statewide programs.	3.97	.61	3.79	.80	1.51
18. I would be willing to serve on an advisory committee for the purpose of strengthening current IAEP thrusts.	3.17	1.11	3.02	1.01	.81
19. Internationalizing agriscience programs has not been pushed too much in the state.	3.52	.85	3.48	.89	.50
20. As agriscience teachers, we should view the world as our laboratory to prepare students for working and living in a global society.	4.00	.68	4.00	.88	.00

Note. Means were calculated on the basis of a five point Likert-scale 1=Strongly Unfavorable, 2=Unfavorable, 3=Neutral, 4=Favorable, 5=Strongly Favorable.

*Significant at $\alpha \leq .05$.

Table 6

Means, Standard Deviations, and T- values on Attitudinal Statements Relative to Educational Linkages for Agriscience Teachers Who Received Instructional Materials for IAEP and Those Who Did Not Receive Materials

Statements	Received Materials		Did Not Receive		T- Value
	Mean	SD	Mean	SD	
1. Global education/international understanding should be a part of the philosophy of:					
a. The Michigan Department of Education	3.97	.70	3.83	.82	1.06
b. The Vocational-Technical Education Service.	3.72	.78	3.74	.76	.13
c. The local school districts.	3.63	.86	3.71	.83	.57
d. The Department of Agricultural and Extension Education at MS.	3.91	.75	3.89	.85	.17
2. Global education/international understanding should be a part of the goal statements of:					
a. The Michigan Department of Education.	3.94	.65	3.79	.99	1.10
b. The Vocational-Technical Education Service.	3.68	.75	3.77	.89	.30
c. The local school district.	3.64	.78	3.68	.80	.28
d. The Department of Agricultural and Extension Education at MS.	3.85	.78	3.88	.91	.20
3. Local global education/international understanding initiatives should be funded by:					
a. The Michigan Department of Education.	3.93	.88	3.97	.93	.25
b. The Vocational-Technical Education Service.	3.64	.86	3.62	1.07	.13
c. The local school districts.	3.40	.93	3.32	1.03	.46
4. IAEP should be linked directly to the international efforts of:					
a. The United States Department of Agriculture.	4.17	.60	4.19	.72	.16
b. The Michigan Department of Agriculture.	4.21	.55	4.17	.69	.35
c. The private sector.	4.05	.70	3.92	.90	.95
5. International concepts should be integrated into every facet of the school curriculum, including:					
a. Grades K-5	3.64	.85	3.62	1.02	.14
b. Grades 6-8	3.86	.70	3.94	.91	.55
c. Grades 9-12	4.25	.70	4.08	.93	1.21
6. International concept should be included in the undergraduate curriculum of college students.	4.22	.60	4.22	.64	.06
7. International concepts should be included in university graduate programs.	4.09	.70	4.16	.68	.59
8. Local agriscience internationalizing initiatives are more likely to be successful if they involve:					
a. Michigan Department of Education.	3.82	.94	3.82	.83	.02
b. MS Department of Agricultural and Extension faculty.	4.06	.66	4.01	.76	.43
c. School administrators.	3.83	.75	3.80	.87	.23
d. Vocational-Technical Education Service personnel.	3.87	.77	3.91	.75	.25
e. Local teachers.	4.10	.65	4.00	.81	.87
f. Local counselors.	3.85	.67	3.92	.78	.60
g. Advisory committee members.	3.95	.72	4.05	.73	.81
h. Individuals from the local agricultural community.	4.09	.64	3.91	.83	1.48
i. FFA alumni.	3.91	.65	3.91	.75	.07
j. Parents.	3.83	.68	3.83	.97	.01

Note. Means were calculated on the basis of a five point Likert-scale 1=Strongly Unfavorable, 2=Unfavorable, 3=Neutral, 4=Favorable, 5=Strongly Favorable.

internationally focused. Therefore, efforts to make the curriculum more internationally focused will be facilitated if program planners use agriscience teachers with more teaching experience. Respondents with different numbers of memberships in professional societies explicitly differed in their attitudes. Hence, program planners might identify agriscience teachers with more memberships in professional societies to provide leadership in making the agricultural education curriculum more internationally focused at the secondary level. Agriscience teachers with high cosmopolitanism had significantly more favorable attitudes toward incorporating international concepts in their local agricultural education curriculums than did teachers with lower levels of cosmopolitanism. Thus, if planners employ agriscience teachers with high cosmopolitanism during the initial stages of the program, this could accelerate the goal of making the agricultural education curriculum more internationally focused at the local level. Reading the Agricultural Education Magazine influenced the attitudes of agriscience teachers relative to internationalizing their local agricultural education curriculums. Thus, additional efforts should be made to encourage more teachers to read the magazine that is published for the profession. The more national seminars in which respondents participated, the more favorable were their attitudes toward internationalizing the agricultural education curriculum. Thus, arrangements should be made to organize seminars/ conferences to help agriscience teachers understand global agriculture and how to make their curriculums more internationally focused. Agriscience teachers who received the IAEP materials and teachers who had not received the materials differed significantly on only 9 of the 91 attitude statements. Thus, there is not sufficient evidence that the instructional materials help improve agriscience teachers' attitudes toward making their curriculum more internationally focused. The favorable attitudes shown by the respondents lead to the conclusion that agriscience teachers in Michigan are willing to internationalize their local agriscience curriculum. Thus, there is potential for expanding internationalization efforts in the state.

Educational Importance

International education has received additional attention in recent years. It is believed that events around the world have caused the educational professions at all levels to give serious attention to the internationalization of various types of educational programs. In agriculture, it is clear that the vitality of one of America's most important industries is directly related to locating and maintaining additional markets abroad. In light of this fact, it is crucial that secondary agriscience programs be internationalized in order to adequately prepare students for competing successfully in a global agricultural market. Prior to addressing this issue, it seems appropriate that we determine the attitudes of agriscience teachers relative to internationalizing secondary programs. This study provides the profession with some data which indicates that agriscience teachers in one state are willing to assist the profession in addressing this issue. Considering that Michigan was selected as one of two states to provide national leadership in this area by the National Council for Agricultural Education, it is most satisfying to see that to a large extent, Michigan's agriscience teachers are willing to internationalize their programs. This study will be most valuable to program planners in Michigan as we attempt to expand our international efforts in the state. Additionally, this study may provide program planners in other states with valuable information in order to effectively expand their respective international thrusts.

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