

## ATTITUDES OF MICHIGAN AGRISCIENCE TEACHERS TOWARD INTERNATIONALIZING THEIR LOCAL CURRICULUM

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### Abstract

It is crucial that secondary agriscience programs be internationalized in order to adequately prepare students for competing successfully in a global agricultural marketing. Prior to addressing this issue, it seems appropriate to study the attitudes of agriscience teachers relative to internationalizing secondary programs. This study examined the attitudes of Michigan agriscience teachers who received the instructional materials and those who did not receive it for making their curriculum more internationalized. Overall, there was no difference in attitudes between the two groups of agriscience teachers. They expressed their favorable attitudes toward making their curriculum more internationally focused. This favorable attitudes of the teachers lead to the conclusion that Michigan agriscience teachers are willing to internationalize their local curriculum.

*Key words:* Agricultural Education, Attitudes, Agric. Curriculum, Instructional Materials.

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### Introduction

Beeman and Check (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,

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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 program 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, 1988) at Michigan State University had spent a year in field testing an instructional manual titled, "Internationalizing Agricultural Education Programs" (IAEP). The project staff believed that the agricultural education profession had a responsibility to add a global perspective in the curriculum regarding world agriculture.

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 did not receive the curriculum. This interest created the need for an in-depth analysis of the attitudes of agriscience teachers in Michigan. The study is, thus, designed to determine the attitudes of Michigan Agriscience Teachers toward student-related aspects, teacher-related aspects, and educational linkages of making their curriculum more internationally focused; and to describe the differences in attitudes toward these aspects between teachers who had received the IAEP instructional materials and those who did not.

### Methodology

The design of this study was descriptive survey. The instrument, used to collect data, contained statements concerning three components 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.

Content validity of the instrument was established by a jury of experts. Instrument was pilot tested and the reliability coefficients of the instruments for the three components were .091, .093, and .094, 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 accessible population was 160 secondary school agriscience teachers in Michigan who were teaching in 1991. Data were collected from them by mail questionnaire during April 30, 1991 to June 10, 1991 and resulted in a 88 percent response rate. Early and late respondent's responses were compared and no significant difference was found between them.

Data were analyzed by using the SPSS/PC+programs (SPSS/PC+, 1990). Frequency counts and percentages, as well as means and standard deviations, were calculated for the descriptive. T-test was used to determine whether there were significant differences between agricultural teachers with regard to their attitudes toward internationalizing their curriculum. Throughout the study, a .05 probability level was used as the basis for rejecting the null hypotheses.

### Results and Discussion

*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 (Table 1). On all but one statements,

**Table 1.** 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 material,

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 where they reside on a county 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 understanding 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	4.43	.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 country	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
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 system, 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 system	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

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  $\alpha \leq .05$ .

"Through IAEP, students will have an opportunity to interact with people in other parts of the world" (mean=3.29), the mean ratings by agriscience 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 student related aspects of making their curriculum more internationalized.

*Teacher-related aspects:* The mean ratings by agriscience teachers who received the IAEP instructional materials for five of the statements ranged from 3.09 to 3.46, indicating neutral attitudes (Table 2). 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 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 statements (Table 3). 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 statements, "Local global educational/ international understanding initiatives should be funded by the local school districts" (mean = 3.04). Thus, the agriscience

teachers who received the IAEP 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) Student's participation in national FFA international programs; (2) Student's 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 a national FFA international programs; and (6) Interest in having their FFA chapter serve as host chapter for students from other countries for 3 weeks (Table 1 & 2).

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 demonstrated favorable attitudes toward making their curriculum more internationally focused. Thus, the planners involved in making secondary schools' curriculum more internationally

**Table 2. Means, standard deviations, and T-values on teacher-related attitudinal statements for agriscience teachers who received instructional materials for IAEP and those who did not receive such material.**

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	3.25	.76	.60
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	3.81	.72	.60
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. MSU'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
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

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 3.** 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 MSU	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 MSU	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. MSU 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 counsellors	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

Means were calculated on the basis of a five point Likert-scale

1= Strongly Unfavorable, 2=Unfavorable, 3=Neutral, 4= Favorable, 5= Strongly Favorable

focused should continue to involve (planning, in-service training, dissemination, evaluation) agriscience teachers in this endeavor. Agriscience teachers who received IAEP instructional materials and teachers who had not received the materials differed significantly on only student's participation in national FFA international programs; student's opportunity to interact with people from other countries; the necessity of in-service training to teachers; the provision of selected reading materials; and interest in having their FFA chapter serve as host chapter for students from other countries for 3 weeks. So, there is no 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 profession 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 they attempt to expand their 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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