

Impact of College of Agriculture Courses on Graduating Seniors' Awareness And Interest in International Agriculture

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Abstract

Colleges of agriculture have the responsibility to help increase their students' awareness and interest in international agriculture through course offerings, curricula and academic environment. The LSU College of Agriculture conducted a workshop series to help administrators and faculty increase the content of international agriculture in the College's curricula and courses. This paper presents findings of a survey of graduating seniors which assessed the impacts of this workshop series and selected student characteristics on student perceptions of the international aspects of the College's courses and curricula. The workshop series did not significantly affect graduating senior evaluations.

Introduction

Interest in the globalization of curricula, courses and instruction in U.S. colleges of agriculture has increased among administrators and faculty with recognition of the growing interdependence between the United States and other countries on agricultural, demographic, environmental and trade issues (Bjoraker 1987, Brandt 1987, Hayden and Thompson 1995, Kellogg 1984, King and Martin 1994, Mason et.al. 1994, and Merritt 1984). As graduates from U.S. colleges of agriculture have more opportunities to work with firms or agencies having international interests, colleges of agriculture must assume more responsibility toward increasing their students' international awareness and interests.

Colleges of agriculture can accomplish the objective

of increasing student awareness of international aspects in agriculture either by creating special international curricula and courses or by modifying existing curricula and courses to increase their international agriculture content. The second approach reaches a larger percentage of students. However, the influence on individual students depends on the curricula and courses taken, since international content differs by course, instructor, discipline, and college.

The College of Agriculture at Louisiana State University (hereafter abbreviated as "College") took a major step to increase the international content of its curricula and courses through a series of Faculty Globalization Workshops, which were conducted in 1994. The College received a Higher Education Challenge Grant from the Cooperative State Research Service (CSRS) of the U. S. Department of Agriculture to help fund the workshops and provide information for colleges of agriculture in other universities planning similar globalization efforts.

Project personnel planned and scheduled six workshops on the main campus at Baton Rouge. These workshops were designed to assist administrators and faculty in making changes in curricula and courses so as to include a greater international dimension. The first workshop featured a keynote speaker whose charge was to motivate all faculty and College administrators to think globally in curricula and courses. The second workshop, specifically designed for department heads/school directors, was intended to increase international content in the various curricula in the College. The remaining four workshops utilized trained facilitators/speakers to explain how faculty could add international elements to their courses. Workbooks containing material supplied by workshop speakers and other data collected by the authors were prepared and distributed to all faculty scheduled for the workshops (Redmann et al., 1995a). A post-workshop written survey of College faculty indicated that 54 percent had made some

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change in their courses for the first full semester following the workshops, primarily to integrate international aspects into their course material ((Redmann et al., 1995b). The extent of these changes was not ascertained. A smaller proportion of faculty planned further changes in courses taught during subsequent semesters.

A survey was conducted by the authors to evaluate the impact of current and modified (i.e., with increased international content) courses in the LSU College of Agriculture on international awareness and interests of students and the impact of the Globalization workshops on the College's courses and instruction. The survey was administered to populations of seniors graduating before (pre-workshop) and after (post-workshop) course changes. The survey consisted of a number of statements to which students were asked to respond based on a Likert-type response scale. This paper presents an analysis of the results of the survey.

Materials and Methods

The study reported in this paper included two objectives:

- a. Evaluation of the series of Globalization Workshops by estimating the impact of LSU College of Agriculture courses and instruction on the awareness and interest in international aspects of agriculture of seniors graduating before and after course changes originating from the workshops.
- b. Assessment of the impact of LSU College of Agriculture courses on graduating senior awareness and interest in international aspects of agriculture within subpopulations based on graduation curriculum, gender, and grade point average.

The survey was administered by the Dean's office as part of senior exit interviews during the Fall 1994 through Spring 1997 period. A total of 93 students voluntarily completed the questionnaire. The authors assumed that insufficient time had elapsed for changes originating from the workshops to significantly influence students graduating over the Fall 1994 through Fall 1995 period. Therefore, this period was classified as the pre-workshop period. However, students graduating during the Fall 1996 and Spring 1997 period would have had two years experience with courses potentially modified for international content based on instructor participation in the workshops. The latter period was classified as the post-workshop group. The pre- and post-workshop groups included 31 and 62 students, respectively. The large difference in numbers over the two time periods primarily reflects the Associate Dean's effort in the second period to conduct more "exit interviews" of graduating seniors and the growing number of students in the College.

The responding seniors expressed their degree of agreement with the six statements using a seven-point scale (where 1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = neither agree nor disagree, 5 = slightly agree, 6 = moderately agree and 7 = strongly agree). They also provided information on their graduation curriculum, gender and grade point average. In this paper, we will focus on the role of these three factors, as well as that of the workshops, in explaining differences in student awareness and interest ratings with respect to College courses. Analysis of variance (SAS Institute, 1989) was used to determine whether student responses differed as a result of the three factors specific to the student or from course changes originating from the workshops (difference between the pre- and post-workshop periods).

Results and Discussion

The six statements evaluated by the responding seniors were (single or two word paraphrasing):

1. Based on the material and experiences I have received from my classes in the College of Agriculture, I feel that I have a good awareness of the international aspects of my discipline (*awareness*).
2. My course work in the College of Agriculture has increased my interest in working in the United States with an international firm or organization (*work U.S.*).
3. My course work in the College of Agriculture has increased my interest in reading about other cultures (*reading*).
4. My course work in the College of Agriculture has increased my interest in international travel (*travel*).
5. My course work in the College of Agriculture has increased my interest in international issues, such as environmental pollution (*issues*).
6. My course work in the College of Agriculture has increased my interest in working in another country (*work Abroad*).

Summaries of student responses (based on the 1-7 scale) to these six statements for the combined and pre- and post-workshop periods are given in Table 1. For purpose of comparison, a mean response score for each statement was computed. Over the combined period, these scores indicated that the respondents slightly agreed with statements 3 (reading--4.80), 4 (travel--4.97) and 5 (issues--4.88), agreed somewhat less with statement 1 (awareness--4.61), and neither agreed or disagreed with statements 2 (work U.S.--4.09) and 6 (work abroad--3.79). Students in the post-workshop period expressed lower absolute levels of agreement with all statements except for statement 6 (work abroad); however, analysis of variance failed to detect significant differences between the pre- and post-workshop periods for any of the statements at the ten percent level (Table 2, Column 3).

With one exception, the graduation curricula were grouped based on the individual workshops conducted in the workshop series as follows: Animal Systems and Food Science; Vocational Education, Agricultural Economics and

Agribusiness, Rural Sociology, and Human Ecology; Horticultural and Agronomic Sciences; and Forestry, Wildlife

Table 1. Influence of LSU College of Agriculture Courses and Instruction on Graduating Seniors' Ratings of Selected International Awareness and Interest Statements by Workshop Period, Gender, Graduation Curriculum, and Grade Point Average.

Variable	N	Statement ¹						Ave Work Abroad	
		1	2 Aware- ness	3 Work U.S.	4 Read- ing	5 Travel	6 Issues		
		-----Mean Rating ² -----							
Period									
Combined	93		4.61	4.09	4.80	4.97	4.88	3.79	4.52
Pre-workshop	31		4.93	4.38	4.93	5.12	5.12	3.58	4.68
Post-workshop	62		4.45	3.95	4.84	4.90	4.79	3.92	4.47
Gender									
Female	54		4.44	5.07	4.94	5.07	4.38	3.61	4.59
Male	39		4.84	4.56	4.76	4.84	5.56	4.05	4.76
Curriculum									
Animal Systems and Food Science	14		5.00	4.57	5.35	5.50	5.50	4.21	5.02
Voc Education, Agr Economics, & Rural Sociology	17		4.94	4.65	5.00	5.29	5.59	3.94	4.90
Human Ecology	35		4.31	3.60	4.80	4.91	3.80	3.31	4.12
Horticulture and Agronomy	17		4.82	4.59	4.94	4.88	6.06	4.18	4.91
Forestry, Wildlife & Fisheries	7		3.85	3.14	3.42	3.71	4.28	3.57	3.66
Grade Point Ave ³									
2.0-2.49	15		4.26	4.06	4.60	4.86	4.26	3.66	4.28
2.5-2.99	34		4.73	4.32	4.88	4.94	4.97	3.55	4.56
3.0-3.49	24		4.66	3.79	4.70	5.08	5.04	3.66	4.49
3.5-4.00	19		4.57	4.15	5.42	5.15	5.21	4.63	4.86

¹ See the text for complete wording of these statements.

² Ratings are based on a 7 point scale, where 1 = disagree strongly, 2 = disagree moderately, 3 = disagree slightly, 4 = neither agree nor disagree, 5 = agree slightly, 6 = agree moderately and 7 = agree strongly.

³ Grade point averages were grouped for the descriptive analysis only.

Table 2. Tests for Differences in Student Agreement/Disagreement Ratings of Six Awareness or Interest Statements Overall and by Exit Interview Period, Graduation Curriculum, and Exit Interview Period by Graduation Curriculum based on ANOVA– Type III Sum of Squares.

Statement ^z	Overall (F _{9,80})	Interview Period (F _{1,80})	Graduation Curriculum (F _{4,80})	Interview Period by Graduation Curriculum (F _{4,80})
Awareness				
F Value	1.14	2.36	0.48	1.03
P Value	0.35	0.13	0.75	0.40
Working in U.S.				
F Value	1.81	1.91	1.99	0.61
P Value	0.08*	0.17	0.11	0.66
Reading				
F Value	1.39	0.72	0.84	0.96
P Value	0.21	0.40	0.50	0.44
Travel				
F Value	1.29	1.96	0.75	1.15
P Value	0.25	0.17	0.56	0.34
Issues				
F Value	4.65	2.18	7.75	1.16
P Value	0.00**	0.14	0.00**	0.34
Working Abroad				
F Value	0.95	0.02	1.05	0.75
P Value	0.49	0.89	0.39	0.56

* See the text for wording of statements.

** Statement statistically significant at a 0.01 level or lower.

* Statement statistically significant at a 0.10 level or lower.

and Fisheries. The one exception was Human Ecology, which for this study was classified as a separate group because of the large number of students in this major. The relationships between graduation curriculum, gender, and grade point average of the graduating seniors and their ratings by statement are also presented in Table 1.

This sample of graduating seniors comprised slightly less than one-fifth of the students graduating during the period. The Associate Dean's exit interview is voluntary and many students participating in the interview process did not want to take the additional time to complete the survey. The sample, however, appears to be representative in grade point average and graduation curriculum but slightly biased in the proportion of female students (55 female: 45 male).

A linear statistical model was employed to assess differences in agreement with the statements that might be associated with the effects of the workshop series and the students' graduation curriculum. This model included main effects of interview period (pre- or post-workshop) and graduation curriculum, as well as an interaction term to account for differential effects of the workshops on the several curricula. The results are presented in Table 2. Overall, the model was significant for the statements dealing with interest in international issues ($p < .01$) and working in the U.S. ($p = 0.08$). As regards the tests of model effects, there was no evidence of differential effects of the workshops on different curricula, as evidenced by the fact that for each of the six statements the interaction term was

non-significant. Also, as previously stated, in no case was the main effect of interview period statistically significant. This would argue that there is no evidence that the workshop series materially altered students' agreement with regard to the target statements. Finally, the single statistically significant finding of the main effect of graduation curriculum was with regard to the degree of agreement with the statement on international issues. To assess the source of this difference among the curricula groups, multiple comparisons were effected using the Tukey-Kramer adjustment to control the overall significance level. Seniors from human ecology expressed a lesser degree of agreement with the statement related to interest in international issues than did students from the remaining curricula, except students from the curriculum of forestry, wildlife, and fisheries.

A second statistical model was employed to assess differences in agreement with each of the six statements with regard to gender and grade point average (GPA). Results are summarized in Table 3. Where gender differences were found (issues and working in U.S.), female students tended to demonstrate less agreement with the statement than their male counterparts. In the two instances where GPA was found to significantly influence agreement (working abroad and issues), GPA was positively associated with the expressed level of agreement. The authors cannot explain the differences by GPA for these two statements.

Implications and Conclusions

There was no evidence found to suggest that the workshop series materially affected the graduating seniors' interest in and awareness of the international aspects of their curricula. This finding would appear to apply across all curricula in the College, and is not restricted to a single curriculum or subset of curricula. However, it should be noted that whereas College administrators and workshop personnel encouraged faculty to use what they learned from the workshops to revise their courses for international content, actual changes were voluntary, not mandatory. If the outcome of the LSU Faculty Globalization workshop program is indicative of the impact of such voluntary programs on course content and instruction, colleges of agriculture may need to use more enforceable methods to increase the international content of their courses and instruction.

College courses appear to be having their smallest impact on the international interests of students in an area which is probably the primary mission of college, namely preparing graduates for employment. Statements 2 (work in U.S.) and 6 (work abroad) measure the impact of College courses on increasing student interest in employment in the

U.S. and abroad, respectively. Responses to these two statements indicate that the College may not be providing students strong preparation or guidance in their decision to work with an international firm in the U.S. or abroad. In the College's defense, however, these areas may be the most difficult to influence of all the areas covered by the six statements. Additional research is needed to address this issue.

The results further indicate that students graduating from human ecology may be receiving somewhat less international content in their course work, specifically as regards stimulating interest in international issues, than are students graduating from the other curricula, except for forestry, wildlife and fisheries. This finding is surprising in that the faculty of that School tend to maintain a high level of international content in their curriculum. It is possible that this effect results primarily from the gender composition of that student population. In any case, the large differences a student level of agreement with the six statements indicate that all departments (schools) in the College have specific areas in which they need to improve their coverage of international aspects in courses and instruction.

This research may have raised more questions than it has answered. If the College is representative of colleges of agriculture in the U. S. land grant college system, students do not, in general, feel that agriculture courses are very influential in increasing their awareness and interest in the international aspects of agriculture. Given the need to increase international awareness and knowledge among potential employees of agribusiness firms and the U.S. citizenry in general, the College, and perhaps colleges of agriculture in general, should take additional steps to increase the international content of their classes. Each college will need to decide whether international literacy can be more effectively accomplished in its traditional courses or in specialized international literacy courses required of all its students. More research on the most effective means of increasing international literacy among graduates of U.S. colleges of agriculture also appears to be needed.

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Table 3. Tests for Differences in Student Agreement/Disagreement Ratings of Six Awareness or Interest Statements Overall and by Gender and Grade Point Average , based on ANOVA– Type III Sum of Squares.

Statement [†]	Overall (F _{2,86})	Gender (F _{2,86})	GPA (F _{2,86})
Awareness			
F Value	0.86	1.71	0.04
Probability of F	0.43	0.19	0.84
Working in U.S.			
F Value	3.29	6.57	0.04
Probability of F	0.04*	0.01**	0.83
Reading			
F Value	0.88	0.28	1.40
Probability of F	0.42	0.60	0.24
Travel			
F Value	0.45	0.70	0.16
Probability of F	0.64	0.40	0.69
Issues			
F Value	7.85	12.86	3.68
Probability of F	0.00**	0.00**	0.06*
Working Abroad			
F Value	2.50	2.10	3.23
Probability of F	0.09*	0.15	0.08*

[†] See the text for wording of statements.

** Statement statistically significant at a 0.01 level or lower.

* Statement statistically significant at a 0.10 level or lower population.

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Alternative Approaches to Computerized Monitoring of Student Progress

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Abstract

This paper describes the strategies of several approaches to computer-driven advising. An electronic advising system is developed to follow student progress during their first four semesters of academic work. The goal is to provide accurate and efficient advising.

Introduction

Higher education is constantly challenged to deliver quality education in a cost-effective way. Under the leadership of President John Lombardi and Provost Betty Capaldi, the University of Florida administration has been engaged in improving the performance of the University in undergraduate education. This effort has been summarized in a recent report (Lombardi and Capaldi, 1996). Part of this effort has focused on the following areas; (1) improved academic advising, (2) increased retention of students, (3) decreased credit hours not used to fulfill graduation requirements, and (4) increased availability of key courses required for graduation.

The university developed two approaches using computers to follow the academic progress of students. First, a system called Monitoring Academic Progress Policy (MAPP) was implemented. This system has been replaced by the current system, called Universal Tracking (UT). An underlying feature of each system is that they were designed for advising and monitoring students, during the first four semesters for MAPP and eight semesters for UT. In principle,

either system could be extended to apply over the entire period of the student's undergraduate education. Each system is described, along with its advantages and disadvantages.

Academic advising quality depends, in part, on perceptions of students who receive the advising. Factors affecting these perceptions have been discussed in a recent report (Bedeker and Young, 1994; Radhakrishna and Thompson, 1997). Quality academic advising also requires planning the students' curricula to include the courses required of their majors.

Course prerequisites are frequently required for advanced courses. The importance of advising students about these prerequisites has been previously discussed (Martin, 1989). The University monitoring system now used emphasizes not only which courses should be taken, but also identifies the sequence in which the courses should be taken. This paper discusses the use of the computer as a powerful tool in an innovative way to facilitate advisors as they provide quality academic advising to their students.

Methods For Computer Monitoring Of Student Progress

Monitoring Academic Progress Policy (MAPP) was based on applying benchmark standards, after students had earned 30, 45, and 60 hours of course work. MAPP was supported by the central Academic Advising Center of the University, including students from all colleges with