

AN EXAMINATION OF INTERNATIONAL STUDIES AT 1862 LAND GRANT INSTITUTIONS

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Abstract

The purpose of this study was to determine the status of international agricultural education at 1862 land grant institutions, by answering the question, what are our 1862 land grant institutions doing to integrate international studies into their undergraduate agricultural curricula? Two investigations were conducted, (1) a website content analysis and (2) an international director survey. A website based content analysis was conducted to determine the contents of 57 land grant institution's colleges of agriculture' websites identified current trends in agriculture regarding international themes. The programs identified were: (1) student study abroad; (2) faculty research and/or programs; (3) graduate research and or programs; (4) training and/or visitors; (5) international students on campus; (6) foreign agreements and/or contracts; and (7) majors, minors, certificates, curriculum, and course content. All questions were based on information for the 2003-2004 academic year. Of the 57 institutions surveyed, a total of 31 surveys were submitted for a response rate of 54%. The results of the content analysis and the survey indicated that the nature of international agriculture programs is predictable, yet approaches, support and implementation vary widely between institutions. Despite the high level of international training for faculty and the strong belief in study abroad programs, very few agriculture students participate in study abroad programs at 1862 land grant institutions.

Introduction

Educational institutions in the United States have examined curricula and consequently revised programs to reflect current trends in internationalization. Increasingly, land grant institutions have also looked at their role in teaching modern agriculture and have found that internationalizing agricultural curriculum was a priority (Alsup, et al. 2001). Internationalization has been occurring at a time when rapid scientific advances in agriculture and food crops, reduced prices of agricultural products from over production, trade barriers, and a decline in enrollments in colleges of agriculture have been of considerable concern because our economy depends on domestic agriculture and exportation of agricultural products. The education system must reflect the world as it is today, a global environment in which "...international education

will strengthen our nation for the future (U.S. Department of Education 2000).” This study looks at 1862 land grant university agricultural programs and whether or not they incorporate relevant curriculum with regard to international studies in agriculture.

Methods

During the last decade land grant university officials expressed that there was a deep need for agricultural curricula to include programs with international themes (National Research Council, 1992). Therefore, through a content analysis, the researcher sought simply to capture the current state of international studies. Because there has been very little documentation of international themes in post secondary agricultural studies, a comparison of agriculture course content at land grant universities from eleven years ago to now was not appropriate. An investigation of integration of international themes into undergraduate agriculture curricula through a content analysis of the websites of the 1862 land grant institutions was valuable because it identified the current types of programs that were available. The themes discovered through this content analysis were used to design the survey portion of this study. For the purposes of the population selection, the researcher selected only the 1862 land grant institutions as a sample to represent the land grant system, which also included seven 1862 land grant institutions located in U.S. territories.

Website Content Analysis -- A pilot study was conducted to analyze website content. First, the researcher used an electronic random sample generator to select a sample of 1862 land grant colleges of agriculture websites. Using the institutions’ websites, a college of agriculture homepage was found for each institution (if there was one). The homepage was then searched for a link of any kind to international agricultural programs. If no direct link was available through the homepage, a search was conducted with keywords: international, internationally, global, globally, world, worldwide, trade + international, import, export, world + market, and world + marketplace. The intent of this search was not to catalogue the occurrence of the keywords, but simply to determine if there were any international activities in agriculture available at each university within each respective college of agriculture. The keywords were used as standardizing search guides to evaluate the contents of each website.

There was no standard format for universities to present a catalogue of courses to students. Also, curricula and majors offered within the colleges of agriculture varied. One institution offered only a few degree options; others offered hundreds of different degrees, all with their own curriculum and course requirements. The pilot study using a random sample of just 15 institutions was enlightening and was invaluable to help develop the instrument; the pilot study results directed the researcher to the relevant areas of interest for the full content analysis and the survey.

Using the same methods outlined in the pilot study, the researcher completed a full content analysis of the websites through a census of all 57 of the 1862 land grant institutions. The census was conducted using the same methods as the pilot study.

Survey -- The population for the survey included all 57 of the 1862 land grant institutions identified in the content analysis portion of this study. Since each institution had its own system of organization, there was no unique way of locating each staff or faculty member who was responsible, interested, or otherwise involved in international programs. Therefore, survey’s respondents were chosen based on the expert advice from the National Association of State Universities and Land Grant Colleges Commission on International Programs (NASULGC, 2004). NASULGC provided the researcher with a list of the international program directors and

committee members from each of the 1862 land grant institutions. A census was conducted through a survey that was distributed via email to all 57 of the 1862 land grant institutions. The researcher anticipated that some of the people on the list might think they were not the most appropriate person to respond to the survey. A letter of introduction attached to each survey reflected the expectation that if the respondent believed it necessary, the survey might be forwarded to an appropriate respondent within each college of agriculture at each institution. Participants of this study were all employees of the 1862 land grant institutions and they were employed in one or both of the fields of agriculture and international studies.

The survey was designed using the results of the content analysis study to focus the survey and develop questions. The topics for the questions were derived from the seven subject areas identified in the pilot study: 1) student study abroad; 2) faculty research and/or programs; 3) graduate research and or programs; 4) training and/or visitors; 5) international students on campus; 6) foreign agreements and/or contracts; and 7) majors, minors, certificates, curriculum, and course content. The survey asked the respondents to describe the nature of agricultural undergraduate focus areas in international studies defined by the content analysis. Demographic information was collected to ensure that a wide variety of respondents and institutions were represented. There were no distinguishing features reported that could lead to the identification of respondents.

Results and Discussion

Survey Content Analysis -- Eight of the 57 land grant institutions did not have choolds of agriculture or agricultural studies at the institution and were therefore discarded from the content analysis. Twenty of the 49 remaining did not have international programs in agriculture or an international link of any kind on their college of agriculture homepage. Of the remaining 29 institutions (n=49), 59% did have international programs in agriculture; 13 of which listed course content, majors, minors, certificates, or some form of curriculum development as part of their international programs in agriculture. Therefore, nearly 23% reported via their websites that they have incorporated internationalization of course content, majors, minors, certificates or some form of curriculum development as part of internationalizing agricultural studies for undergraduates.

Of the 57 institutions surveyed, a total of 31 surveys were returned for a response rate of 54% (n=31). Only totally completed surveys were used; partially completed surveys were omitted. Qualitative responses were interpreted so that repetitive responses were omitted.

Undergraduate Students -- Enrollment of agricultural studies majors in the 2003-2004 academic year varied from zero to 4,500 students, with a mean value of 1,668 students. The respondents indicated that study abroad was the only program available at all 31 institutions. All of the other programs listed varied in availability from institution to institution. In Table 1, the response ratio for each international program is indicated. The respondents listed other available programs and indicated three unique international programs available to students of agriculture: international internships, self-designed majors, and an associate degree.

Table 1. Available International Programs in Agriculture

Programs	Frequency	Response Ratio (n%)
Study Abroad	31	100%
International Extension Programs	9	29%
Graduate Research	31	100%
Graduate Programs	28	90%
International Visitors	28	90%
International Visitor Training	21	68%
International Students on Campus	28	90%
Foreign Agreements/Contracts	26	84%
Major	22	71%
Minor	27	87%
Certificate	15	48%
Curriculum/Course Content	25	81%
Other, Please Specify	3	10%

There were a wide range of structures and management types present in the institutions that participated in the survey. Some institutions administered a few of their own international programs; others administered most of them. In descending order of frequency, the programs that were administered directly through the academic institutions college/department of agriculture are ranked as following: International Visitors at 87%; Minors at 74%; Foreign Agreements/Contracts, Graduate Research and Graduate Programs all at 68%; Study Abroad at 65%; International Visitor Training at 55%; International Students on Campus at 42%; International Extension Programs and Certificates both at 35%; and at 10% two other international programs were indicated: self-designed majors and an associate degree.

Respondents were asked to indicate the frequency of undergraduate agriculture students' participation in study abroad programs at their institution. As seen in Table 2, the greatest number (11) of respondents indicated that between 3% and 10% of undergraduate students enrolled in agricultural studies majors and/or minors programs at their institutions studied abroad in the 2003-2004 academic year. However, one respondent indicated that between 30% and 40% of agriculture students studied abroad.

Table 2. Frequency of Undergraduate Agricultural Students Who Studied Abroad in the 2003-2004 Academic Year.

Student Percent	Frequency	Response Ratio (n%)
Less than 3%	10	33%
Between 3% and 10%	11	37%
Between 10% and 20%	7	23%
Between 20% and 30%	1	3%

Between 30% and 40%	1	3%
Between 40% and 50%	0	0
More than 50%	0	0

Nearly half of the respondents indicated that their institution offered some kind of undergraduate major that included specific international agriculture content and focus. Response ratios indicated that 48% of the respondent's institutions offered undergraduate majors with specific international agriculture content and focus and 52% did not.

Fourteen of the 15 (48%) respondents who indicated their institutions do offer undergraduate majors with specific international agricultural content and focus, indicated the majors they offer. Respondents indicated that majors in international studies are available in a broad range of agricultural subjects and include the following: (1) Agricultural Economics with International Marketing or Trade emphasis, (2) Secondary Major in International Agriculture, (3) Crop and Soil Science, (4) Horticulture, (5) Animal Science, (6) Food Science/Food Industry Management, (7) Agribusiness Management, (8) Agriscience, (9) Agriculture and Natural Resource Communication, (10) Agriculture and Resource Economics, (11) Secondary Major in International Studies, (12) International Agriculture and Natural Resources, (13) International Agricultural Marketing, (14) International, Resource, and Consumer Economics, (15) Tropical Agriculture, and (16) Rangeland and Watershed Management.

Besides majors, nearly half of the respondents indicated that undergraduate minors with a specific international agriculture focus were offered at their institutions. Response ratios showed that 52% of the respondents' institutions offered undergraduate minors with specific international agricultural content and focus and 48% did not. As with majors, respondents indicated that minors in international studies are available in a broad range of agricultural subjects and include the following: (1) International Agriculture, (2) Agricultural Development, (3) International Studies, (4) Agribusiness/Agricultural Business, (5) International Agricultural Marketing, (6) Global Agriculture, (7) Resource Economics, and (8) Environmental Science. However, only 17% of respondents indicated that their institution offered undergraduate certificates or specialty emphasis programs with specific international agricultural content and focus. Undergraduate courses with specific international agricultural content were offered at nearly all institutions that responded. Twenty-nine (94%) of the respondents indicated that their institutions offered undergraduate courses with specific international agricultural content and focus, whereas only 2 (6 %) did not.

International Students and Visitors -- Enrollment of international undergraduate agriculture studies majors varied from zero to 374 students, with a mean value of 67 international students. The response rate for this item was 84%.

A majority of respondents indicated that their agricultural college/department provided and/or participated in training of international visitors. All 31 respondents chose to answer this question. Twenty-seven percent of respondents replied that their agricultural college/department provided and/or participated in training of international visitors whereas 13% did not. However, all respondents indicated that their agricultural college/department provided and/or participated in hosting of international visitors.

Faculty and Funding -- Eight institutions indicated that between 10% and 20% of their agricultural studies faculty participated in research and/or programs that were international

during the 2003-2004 academic year. Two respondents noted that over 50% of their faculty participated in research and/or programs that were international in nature during the 2003-2004 academic year. Table 3 shows that the response rate was 97% and presents a wide range of responses.

Table 3. Frequency of Agricultural Faculty Who Participated in Research and/or Programs that were International in Nature in the 2003-2004 Academic Year.

Category	Frequency	Response Ratio (n%)
Less than 3%	2	7%
Between 3% and 10%	4	13%
Between 10% and 20%	8	27%
Between 20% and 30%	7	23%
Between 30% and 40%	3	10%
Between 40% and 50%	4	13%
More than 50%	2	7%

Institutions reported the number of current foreign agreements, grants, and/or contracts from zero to 137 foreign agreements, grants, and/or contracts. The mean value of foreign agreements, grants, and/or contracts was 30 per institution. Only one institution did not have foreign agreements, grants, and/or contracts. The response rate for this item was 81%.

A minority of respondents indicated that faculty at their academic institution received training on integration of international content into undergraduate curriculum. The response rate for this item was 97%. Response ratios indicated that 33% of the professors at the respondent's institution have received training on integration of international content into undergraduate curricula and 67% have not.

Respondents were asked if their academic institution provided incentives to faculty for developing international undergraduate curriculum. Response ratios indicated that 35% of the respondent's institutions provided incentives to faculty for developing international undergraduate curricula and 65% did not.

A similar response was given by respondents regarding their academic institution's encouragement to faculty to incorporate international themes into undergraduate curriculum. Thirty-five percent of the respondents' institutions provided incentives to faculty for developing international undergraduate curricula and 65 % did not.

Respondents were asked to select the top three items they believed were the most effective methods of teaching undergraduate students about international agriculture. Respondents indicated that they believed study abroad experiences are the most effective way to teach undergraduate students about international agriculture. In descending order of frequency, the following programs were listed after Study Abroad at 100%: Curriculum/Course Content at 68%, International Students on Campus at 48%, Foreign Agreements/Contracts at 26%, International Visitors at 16%, Majors at 13%, Minors at 13%, International Extension Programs at 10%, Other Specified Programs that totaled 6% were (1) international internships and (2) undergraduate research on agriculture and biology topics; Certificates at 3%; International Visitor Training at 0%.

Respondents provided comments and ideas that they had about the integration of international studies into undergraduate agricultural curricula. The response rate for this item was 35%. Following are comments from some of the responses submitted

(1) We need to show direct benefit to students, such as placement rate upon graduation or quotes from agricultural firms about international importance.

(2) We have asked and encouraged our faculty to incorporate an international dimension in all courses taught to undergraduates. Some courses have more emphasis than others depending on the course subject matter.

(3) The problem is the perception that it is not an important topic and that there would not be much student interest.

(4) Budget cuts have adversely affected our international programs.

(5) The only effective means to integrate international studies into the undergraduate curriculum is to travel abroad.

(6) It is important to get the students physically out of the country; they need to travel to get the experience they need.

(7) It is essential, but given only token support at our institution.

Respondents indicated problems they faced regarding the integration of international studies into undergraduate agricultural curricula at their institution. The response rate for this item was 55%. Responses were grouped into themes based on response frequency. Themes included lack of support, lack of funding or resources, and lack of enthusiasm from both professors and students.

Summary

Content analysis of this study revealed that the 13 colleges of agriculture that had a specific international focus were not tied to any specific agricultural discipline. A study completed in 1994 at Iowa State University reported similar findings (Mason, et al. 1994). Comparisons among majors within the colleges of agriculture did not indicate any substantial differences across majors in student interest and knowledge of international agriculture (Mason, et al. 1994). International programs in agriculture existed in all agricultural disciplines from agricultural economics to animal and crop sciences.

Further, these 13 institutions varied greatly with respect to their international curricula, course development, majors, minors, and/or certificates. Although global studies minors, specializations, and certificates were available at some institutions, only one elective course was offered at the other institutions. Among the minors, specializations, and certificates available, most requirements were satisfied by courses taken outside the college of agriculture and did not involve international agriculture curricula. The content analysis of the web pages also revealed that gaps exist with respect to information on international program development in colleges of agriculture. Thus, further investigation of information regarding the structure of international programs may be needed to determine the exact nature of international programs. Perhaps analysis of course catalogs and face-to-face interviews with administrators and faculty will yield more precise results.

The content analysis portion of this study provided information regarding the range of internationalization within 1862 land grant universities. Colleges of agriculture currently utilize study abroad programs; faculty-based programs; hosting international training programs and visitors; increasing enrollment and awareness of international students on campus; and encouraging agreements and contracts with foreign institutions. All of these programs have the

potential to impact undergraduate curricula. However, many of these programs have been in place for a long time and have always had effects on undergraduate curricula (National Research Council, 1992). While the content analysis mapped the current state of curriculum internationalization within colleges of agriculture overall, it did not provide insights about how undergraduate agricultural curricula have changed over the past fifteen years.

The survey component of this study provided additional evidence about the current extent of internationalization of agricultural studies. Institutions represented in this study varied demographically and structurally. The numbers of majors enrolled in agricultural studies ranged from zero to 4,000 students. Study abroad and international visitors/students were found at most universities. However, the respondents also indicated that many of the other international program activities were commonly offered at their institutions.

In addition, survey respondents indicated undergraduate majors and minors with specific international agricultural content and focuses were available in many land grant institutions. For example, international majors were available at 48% (15) of responding institutions and minors with an international focus were available at 52% (16) of the responding institutions. Also, 94% of respondents reported that their institutions offer undergraduate courses with specific international agriculture content.

Training for, and visits by international participants appear to be prevalent techniques for internationalizing agricultural programs, as well as increasing enrollment and awareness of international students on campus. All respondents reported that their colleges of agriculture host international visitors and 87% (27) reported that their colleges participate in training international visitors. According to Hayward (2000) this is an effective internationalization technique for campuses across the nation.

While many administrators and faculty believed that study abroad programs are the most effective way of internationalizing undergraduate curricula, agriculture students who studied abroad in the 2002-2003 academic year made up only 1.5% of all U.S. students who studied abroad. This is by far the lowest percentage of all fields of study for that academic year (Institute of International Education, 2004). When respondents were asked to comment on problems associated with study abroad, respondents most frequently cited the following issues (in descending order of frequency): lack of support, lack of funding or resources, and lack of enthusiasm from both professors and students. Ninety percent (28) of the respondents reported that their academic institution encouraged international themes in their undergraduate curricula. Yet, 67% reported that they had not received training in order to integrate international themes and 65% report that there was no incentive for faculty to develop international undergraduate curricula. Professional development of faculty in international programming represents a tremendous opportunity for colleges of agriculture.

The results of the content analysis and the survey provide new evidence about the current state of internationalization in the colleges of agriculture in 1862 land grant institutions. The nature of these programs is predictable, yet approaches, support and implementation vary widely between institutions. Furthermore, respondents recognized that many of the same programs are important to teaching students and developing a global perspective in undergraduate studies. For example, respondents reported that they thought study abroad to be the most effective method of teaching undergraduate students about international agriculture. Despite the popularity of study abroad programs as an effective tool to increase internationalization, only 10 (33%) of the respondents reported that less than 3% of their agricultural students actually studied abroad in the 2003-2004. This small percentage of college of agriculture students studying abroad is very

similar to other national studies that reveal similar anemic participation. What is interesting to note is that few colleges of agriculture's administrators seem to recognize the importance of study abroad amongst their undergraduate population. Given many university's stated goals of 20% study abroad, the low percent of college of agriculture students would seem to be at the crisis level. Eleven (37%) reported that between 3% and 10% of their students study abroad and seven (23%) reported that between 10% and 20% of their agricultural students studied abroad in the 2003-2004 academic year. Still, as noted above, in the 2002-2003 academic year, agriculture students made up only 1.5% of all U.S. students who studied abroad, by far the lowest percentage of all fields of study for that academic year (Institute of International Education, 2004).

The results of this study cannot be statistically compared to the national averages recorded in 2002-2003. Yet, the national average shows a much lower number of agriculture students who traveled abroad than students in any other field of study. The use of the term study abroad may be defined in different ways to include all overseas programs (including, for example, short term summer programs) or perhaps only semester-long or annual programs of study abroad. It should be noted that these findings raise an important issue. Study abroad programs were widely recognized by survey respondents as the most valuable internationalization technique, yet the evidence showed that it is not widely utilized. Unless some form of study abroad programs are required, most students are unlikely to choose to benefit from this type of experience. Colleges of agriculture should reexamine the importance of study abroad and perhaps require all students to take part in this valuable experience. This action would set colleges of agriculture apart from the rest of colleges and emphasize the value and importance of studying abroad.

The data in this study indicated that the scope and relative importance of international studies at the 1862 land grant institutions is often driven by financial considerations. Faculty research and faculty development programs are primarily funded by external grants, which bring money to universities. Many universities offer partial support to students to study abroad. However, one of the hidden costs is the extra time that it often takes study abroad students to graduate. Foreign visitors, training and international students all bring money to universities. In each case, the source of the funding does not originate with the university, but from an outside source giving money to the university. In most cases such programs have been in place at the universities for some time. The content analysis revealed that colleges of agriculture's websites targeted agriculture students for study abroad, highlighted international students and visitors, and heavily featured faculty research projects and agreements and contracts that involve foreign countries. These programs undoubtedly have value and enhance the overall international image in schools of agriculture without expense to the university. If study abroad programs are going to gain traction as an integrated part of the undergraduate program, then colleges of agriculture are going to need to find ways to help students graduate on time and to reduce the cost of participation.

Overall results of this study found that international content appears to be incorporated within undergraduate curricula at many 1862 land grant institutions. The presence of these programs was largely unobservable in the content analysis of colleges of agriculture's websites, but was more clearly articulated in the survey results reported in this study. This discrepancy may have been because there are no clear definitions or standards for adequate internationalization, international literacy, or evaluation of competence (National Research Council, 1992). Also, respondents reported that faculty and students were unenthusiastic about

the need for international studies. Thus, given that websites are largely designed by faculty and staff to appeal to students, it may not be necessary for those websites to provide more specific information on global aspects of curricula in order to attract students interested in participating in international programs.

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