Evaluation of Selected Courses Intended to Internationalize the Curriculum in the College of Agriculture at Montana State University

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Abstract

Internationalization of the curriculum is increasingly important to many in higher education. Proponents cite cultural understanding, global knowledge, and a commitment to develop sustainable international food systems. However, there are a number of barriers to implementing international content in undergraduate courses. Agular (2002) suggested that curriculum, attitudes, policies, resources, and faculty training were among some of the key obstacles.

The purpose of this study was to determine the impact of internationalized curriculum on undergraduate students in the College of Agriculture at Montana State University. The objectives were to: 1) identify perceived benefits gained by students participating in internationally focused courses, and 2) identify long-term impact of student participation in the internationally focused courses. Evaluation of results indicated predominately positive responses toward international learning. Students indicated that they have a much better understanding of international agricultural markets, culture, broader worldview, and a greater understanding of global issues related to agriculture.

Keywords: Tribal Colleges, Native Americans, Participatory Rural Appraisal, Experiential Learning

Acknowledgments: This research was supported by a USDA Higher Education Challenge Grant.
Introduction
With the dawn of a new century, many professors and administrators believe higher education needs to provide more opportunities for students to become knowledgeable about globalization. Increasingly, international scholars believe that the university is too isolated and does not recognize the important role it has to internationalize the higher education system (Acker & Scanes, 2000). Often, internationalization in higher education is narrowly referred to as a process of preparing students to work in an increasingly interdependent world. Since this definition is nebulous to some and unclear to others, educators are further required to defend and define the need to internationalize the curricula. While there are a number of plausible explanations given, Maidstone (1996) offers the following four points, to encompass much of the rationale to integrate global topics and themes in higher education: the emergence of a worldwide political economy, greater interdependency among nations, changes in international security, and demographic changes in society.

Theoretical Framework
Maidstone’s (1996) comments provide the impetus for higher education to reform the curriculum to include more global content. Moreover, modifications in the teaching approach should cause faculty to consider innovative ways to deliver an internationalized curricula. For example, some faculty suggest internationalization of the curriculum means a reform of the methods used to teach, the content of the curriculum, and the policies that the university uses to make decisions about globalization in higher education (Aguilar, 2002). For other scholars, this approach to change is not bold enough. Curriculum planners taking an opposing view indicate that an integrated approach to international education is needed and should be a required aspect of the curriculum as noted in the following quote.

The realization before us now is that the question is not whether international/intercultural education should be a significant part of our colleges; without it what we call ‘education’ is incomplete and insufficient for our contemporary and future needs (King & Fersh, 1992: iv quoted in Maidstone, 1996:7).

Given the overload of courses in higher education and the demands of each special interest group, no one is surprised when much of higher education balks at the prospects of adding more requirements. Additional coursework is not the only concern. Barriers exist throughout higher education that retard the development of courses with international content and many of these concerns are often found in the following selected list (Aguilar, 2002).

- Internationalization is not part of the mainstream of higher education
- Negative attitude of key people towards internationalization
- Lack of conceptualization among the various stakeholders
- Lack of institutional policies, strategies, priorities and administrative support
- Lack of national policies encouraging internationalization
- Lack of an adequate academic and administrative structure, language & resources
- Unbalance between the resources available in the developing & developed world
- Ethical, religious, and political considerations
- Curriculum is centered on a market orientation
- Resistance from the faculty to change their work and course structure.
- Insufficient and weak leadership and competency from international offices
- Need for faculty to be re-trained, specially trained, and updated

Colleges of agriculture in particular have struggled to involve students directly in international programming. According to the Chronicle of Higher Education (2000), only 1% of students who studied abroad in the 1999-2000 school year were agriculture students. Compelling reasons abound to suggest students in colleges of agriculture need to become involved in international agriculture. Sustainability of food systems in developing countries is a critical issue. Students at all levels need to work with diversity. Markets are global. Students need to working in international work settings. Finally, students are more employable with social skills that provide them with international competence.
The struggle to internationalize courses in higher education is not a new phenomenon. During the past decade there have been many discussions regarding strategies to teach more internationally focused content. However, the battle lines are often blurred in faculty meetings with vigorous discussions about stand-alone courses versus courses that integrate international content. Similar discussions occurred with the debate regarding the writing across the curriculum movement. Today, few argue against the writing across the curriculum movement. At the same time, many universities have developed mission and goal statements that incorporate steps to internationally integrate curricula and to help develop students who are global ready (Penn State University College of Agricultural Sciences Strategic Plan, 2000). However, the lack of an international vision by professors and university administrators regarding the need to develop courses to internationalize the curriculum is still a major barrier (Etling, 1996).

Impact of Academic Internationalization

Adding international examples in coursework can represent the first tier of student academic international awareness. Short-term travel courses also promote awareness with minimal coursework interruptions. Semester student study abroad programs suggest a greater commitment by students to international learning. Not all students are able or interested in taking an entire semester to study abroad. However, to fully actualize internationalization of the curriculum means students should demonstrate a positive attitude toward other cultures, understand and articulate the interrelationship between countries, and possess the ability to work effectively in a global setting. The university community needs to recognize that if students are able to demonstrate these behavioral changes, then the academic community has met a basic responsibility to educate students to be effective domestic and international citizens.

If universities implement strategies and approaches to internationalize the curriculum, several questions need to be considered. For example, how can the impact of international courses be measured? What criteria should be used to identify student changes? What type of feedback will help determine the value that students gained in internationally focused courses?

Purpose and Objectives

The purpose of this research was to determine the impact of internationally focused courses on students that participated in a course as well as an associated short-term travel experience to an international country. The objectives were to: 1) identify perceived benefits gained by students participating in internationally focused courses, and 2) identify long-term impact of student participation in the internationally focused courses.

Background on Internationalization

Three new internationally focused courses were developed and offered at Montana State University from 2000-2002. These courses were initiated through a successful United States Department of Agriculture Challenge Grant project. The focus of the grant was to develop internationally focused courses that also included an international travel component. Specifically, the courses offered students experiential learning, contextual learning, and were capstone courses for juniors and senior students in the college of agriculture. For example, one of the courses was entitled “Follow the Grain.” In this course, students examined the complexity of grain marketing as the grain left Montana on its way to Portland, Oregon and then on to a variety of international ports. Another course focused on the export of beef genetics to Argentina. The final course taught students how to use a participatory rural appraisal (PRA’s) method with limited resources farmers in Puerto Rico. There were 34 students who participated in the three courses and traveled abroad to the three countries (Puerto Rico, N = 10, Argentina, N = 15, France & England, N = 9). The three course subjects were purposefully selected. Two courses “Follow the Grain” and “Conception to Consumption with an International Flavor,” connected important components of Montana’s agriculture economy to international markets. The third course focused on a methodology (Participatory Rural Appraisal) which is used by the World Bank, United Nations, and USAID.
Methodology

Data were collected after the course content was taught and prior to student travel and it was also collected post travel. Twenty-four students (66%) were randomly selected prior to travel to complete a post-course and pre-travel survey to determine their perceptions regarding perceptions regarding the course content and international travel. The instrument was a slight variation of an instrument used previously by Bruening (2001) to identify perceptions of students in an international program. Two professors from Montana State University and one from Penn State University provided face validity of the instrument. The instrument was quantitative and included 43 statements that were developed over the following general and course themes: international experience, culture, preparation, course content, language, organization, and learning activities.

As written into the original USDA proposal, a post experience questionnaire was included in the protocol. Therefore, an evaluation strategy was developed that included a selection of key statements from the pre-travel instrument. This instrument included quantitative and qualitative questions. The quantitative questions (15 questions) were based on the students’ perceived value of each representative course, cultural impact, preparation to participate, motivation for participation, and impact of international learning. The qualitative section (seven questions) sought to determine the benefits gained, use in their future careers, impact of the experiences, and learning impact.

All students who participated in the course were invited to respond to the follow-up survey. Researchers were interested in collecting the data (July 2002) well after the “initial glow” of the travel portion of the experience (14-28 months after the students returned home). Students completed the courses in the following order: Argentina-beef genetics (May 2000), Puerto Rico- PRA (January 2001), France-England- “Follow the Grain” (May 2001).

An instrument Web site was created and hard copies of the instrument were made. Given the difficulty in locating students, several methods were employed to locate students. Professors provided phone numbers, email addresses, work locations, and access to students through direct personal contact with students working at the university. Seventeen students agreed to participate and returned the instrument (50%) of the original group that participated in the three courses.

Overall there was a tendency for the students to agree that internationally focused courses were a positive experience. The results indicated students tended to agree internationally focused courses were positively received by students both before and after travel. Students tended to strongly agree that the courses presented an excellent learning opportunity.

Furthermore, students tended to strongly agree that travel activity made them more receptive to different ideas and ways of seeing the world. Students tended to agree that more university students should participate in short-term study abroad. Students also tended to strongly agree that this experience was a good opportunity to understand another culture and that studying abroad is the best way to understand culture. In the post-travel, students agreed that their interest in world events increased. Student’s pre-travel interest was not as strong. Students’ agreed that their tolerance of other people had increased because they participated in these internationally focused courses.

Students indicated they tended to be uncertain that it was difficult to understand the culture because of their participation in these courses. Students also tended to agree they were prepared to participate in this internationally focused course. While students appeared to be uncertain if the faculty had done a good job of preparing students for travel immediately after the courses were completed, months later as they reflected it appears that students agreed that the faculty did do a good job of preparing students.

Results

The results of the pre and post-travel questionnaire are shown in Table 1.
Table 1

Perceptions of Students Regarding Selected Statements

<table>
<thead>
<tr>
<th>Perception Statements*</th>
<th>Pre-travel</th>
<th>Post-travel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 25 M</td>
<td>N = 17 M</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>Overall this internationally based course was an excellent learning opportunity.</td>
<td>4.52 0.58</td>
<td>4.76 0.42</td>
</tr>
<tr>
<td>This education abroad program has made me more receptive to different ideas and ways of seeing the world.</td>
<td>4.72 0.58</td>
<td>4.71 0.46</td>
</tr>
<tr>
<td>More university students should participate in a study abroad program.</td>
<td>4.36 0.70</td>
<td>4.82 0.38</td>
</tr>
<tr>
<td>This experience has been a good opportunity to understand another culture.</td>
<td>4.76 0.52</td>
<td>4.47 0.70</td>
</tr>
<tr>
<td>Study abroad is the best way to understand another culture.</td>
<td>4.64 0.49</td>
<td>4.24 0.94</td>
</tr>
<tr>
<td>My interest in world events has increased as a result of participating in the internationally based course.</td>
<td>3.76 0.77</td>
<td>4.00 0.91</td>
</tr>
<tr>
<td>My tolerance of other people and their culture has increased because I participated in this internationally based course.</td>
<td>4.25 1.11</td>
<td>4.24 0.94</td>
</tr>
<tr>
<td>Sometimes it was hard to understand the culture as we traveled internationally.</td>
<td>2.6 0.76</td>
<td>3.18 1.04</td>
</tr>
<tr>
<td>I felt that I was prepared to participate in the internationally based course.</td>
<td>3.92 1.11</td>
<td>4.12 0.83</td>
</tr>
<tr>
<td>The faculty did a good job of preparing me for the internationally based course.</td>
<td>3.28 0.83</td>
<td>4.18 0.78</td>
</tr>
<tr>
<td>An internationally based course is good motivation for developing language skills.</td>
<td>4.24 0.59</td>
<td>3.88 1.02</td>
</tr>
<tr>
<td>In general, the US educational system does not emphasize foreign language development enough.</td>
<td>3.08 1.2</td>
<td>4.00 1.24</td>
</tr>
<tr>
<td>My interest in learning a language has increased because of the internationally based course.</td>
<td>3.32 1.14</td>
<td>3.59 1.09</td>
</tr>
<tr>
<td>Learning was more interesting the semester I participated in the internationally based course compared to a typical semester.</td>
<td>4.36 0.56</td>
<td>4.06 0.87</td>
</tr>
<tr>
<td>I was more motivated to learn the semester I participated in the internationally based course compared to a typical semester.</td>
<td>4.36 0.75</td>
<td>3.76 0.88</td>
</tr>
</tbody>
</table>

Note. *The wording of some statements were modified to reflect a post-travel reflection of students; 5 = Strongly Agree, 4 = Agree, 3 = Uncertain, 2 = Disagree, 1 = Strongly Disagree.

Immediately after the courses, students agreed that courses were good motivation for learning a foreign language. As they responded to this survey later, there was some slippage in their level of agreement. Prior to travel students also tended to be uncertain about whether the U.S. educational system supports development of foreign language. However, months after the international travel, the students agreed that the U.S. system does not emphasize foreign language skill development enough. Still, the students’ interest in studying language tends to be uncertain.

The students agreed that they were more interested to learn the semester that they studied abroad. However, their level of motivation dropped after the students reflected on the post-travel questionnaire. Perhaps the initial higher interest was due to the excitement of international travel.

Students were asked open-ended questions in the follow-up evaluation months after they participated in the courses. Students were asked to identify the benefits of their participation. One student wrote, “I have a better understanding of the grain industry and the impacts of foreign production, programs, and marketing that affects the U.S. grain industry.” Another student wrote, “It helped me have a better understanding of trade and agriculture. It also gave me a better insight on how big agriculture is all over the world and why it is a very important part for everyone involved.” Still another student wrote, “The main benefit I
Students were asked to write about what they learned regarding international culture as a result of this internationally focused course. Selected responses include the following:

In Latin countries women are not treated as equals in agriculture. When I or another girl would ask a question, the answer would be directed to the males of the group. It was truly frustrating for us. When there were aspects of the business we were visiting being addressed they were generally addressed to the males and we were offered tea.” Another student wrote, “I learned that there is no "standard" or "norm" by which to gauge a wide variety of cultures. Each is unique and must be respected and appreciated for the way in which it differs from others. I learned that just because I have been raised in one culture with a predominant viewpoint of the world, it doesn't necessarily mean that my view is correct or applicable in every situation.” Still another view as expressed by a student, “I gained a perspective of how things like co-ops and extension services are viewed by agriculturists, which is a direct result of their culture.”

Students were asked to write about the impact of internationally focused courses in the college of agriculture. Here are the selected responses:

The impact is or should be huge. Agriculture isn't sitting at the local level anymore. Beef producers are contracting their livestock out to Japanese markets. The college ag student who wants a career in any ag field must be aware of the international range of agriculture.” Another student wrote, “We cannot only share what we have learned with the local people of the international culture, but we as a learning institution can gather information from them that can help to either alter our viewpoints or supplement what we have learned with real-world examples. It provides a hands-on learning tool for both sides involved.” Another student wrote, “All students should have some course that
shows the importance of being aware of global issues that relate to agriculture.

Conclusions
Students indicated that the internationally focused courses helped to create a positive environment for learning about international agriculture, it helped their receptivity to understand culture, and to a very limited extent it helped to develop interest in language development. Students strongly supported the idea that more students should participate in study abroad programs. Students expressively wrote about the richness of the experiences and the positive value that they gained while studying abroad. Students also indicated that they learned much about positive and negative attributes while learning about culture.

Clearly these students were able to enhance their college experience by participating in these international courses. While traveling internationally, the courses and related travel appeared to help students to see some of the narrowness of their previous level of understanding. Some students wrote about the broadening of experiences, gaining a better understanding of world marketing, and a student mentioned greater confidence.

The students gained by participating in these courses and the long-term impacts are also evident. International travel can be an exciting and liberating activity. These students indicated that they retained the value of this experience months after travel.

The students learned much about culture by traveling internationally. Some mentioned that culture can be different than their own culture and it needs to be understood and respected. These direct purposeful learning experiences are important for the positive development of students. As a whole, these attributes indicated the necessity for colleges of agriculture to develop internationally focused courses within the curriculum. This finding supports the contention (King & Fersch, 1992: iv quoted in Maidstone, 1996:7) that indicates the contribution that international education provides in making education whole. Students also reported that they have a much broader worldview and a greater understanding of international markets and vision of global issues related to agriculture.

Recommendations
Internationally focused courses should continue to be offered as an active part of the curriculum in the College of Agriculture at Montana State University. The university needs to find ways to integrate the experiences and the knowledge gained by these students into more of their courses. Experiential learning activities must be tied to on-campus international courses to leverage the impact on the learner of international agriculture topics, knowledge, and issues. Students learned through actively participating in the courses and then traveling abroad to test their knowledge in the field. More of the capstone courses at the university should be offered that include the enriching activities described in these courses.

It is likely that most of these students had some prior positive inclinations to participate in international courses. Most scholars and politicians agree that we live in an interconnected world. In particular, agricultural markets rely on global customers. In states like Montana, 50% or more of agricultural crops are sold to international markets.

A greater benefit to society could come if most of the students were required to possess international agricultural competence upon graduation. This competency could be developed through an understanding of world markets, international cultural appreciation, and through language skill development. Students could gain this knowledge from internationally focused courses, an experiential international component such as short and long-term study abroad and through international internships. Colleges of agriculture that offer these opportunities to their undergraduate students will help students close the international competency gap and help prepare them to live in an interconnected world. There is a tendency to believe that courses such as these are routinely offered in colleges of agriculture. Nothing could be farther from the truth. These international courses are innovative, creative, and dramatic departures from the standardized curriculum at Montana State University and in many other universities.

Curriculum planners should take note of these findings to determine if they can replicate the benefits that students gained in these courses. Colleges of agriculture need to find ways to integrate international curriculum models that will provide students with broad
based international experiences so that they are prepared to meet the challenges of global society.

References


