Beliefs, Attitudes, Perceptions and Predictors of International Involvement among College of Agriculture and Life Science Students

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**Abstract**  
A study was conducted to determine the best means to integrate global concepts into courses, develop new internationally-focused courses, and utilize mechanisms for study abroad experiences for students of the college of agriculture and life sciences at the University of Florida. To conduct the study, a 79 item web-based questionnaire was randomly sent to 800 of the 3861 total undergraduate and graduate students. Results showed that there was a low level of current knowledge of international opportunities among student respondents, but their attitudes were very positive toward pursuing international activities. Their ratings of a set of attributes related to skills possessed by students involved in international activities was above average, while their rating of the degree to which they possessed the attributes was in the average range. Areas which showed a substantial difference between importance and possession of attributes included “knowledge of what other countries’ culture has added to US society” and attributes relating to exports, marketing and humanitarian issues. The most significant predictor of intent toward international participation was year in college, followed by attitude, languages spoken and perceived knowledge. Based on these findings, the college needs to utilize ways of incorporating an international dimension into courses and increase awareness of opportunities within the college. The results of this study will be utilized to help internationalize the college towards bringing about the nationwide goal of generating globally ready graduates.
Introduction

It is frequently mentioned today that we are in a global society that is becoming evermore interconnected as a result of advancements in transportation, communication, international trade and changes in the cultural makeup of societies. Many companies, agricultural and otherwise, have stated that they need to have college graduates who are globally competent. This involves having students who are comfortable, confident and competent when it comes to working with people from other countries.

In the University of Florida Strategic Plan (2002), internationalization of the campus and the curriculum is one of the key areas that will be receiving attention. This effort will extend to undergraduate and graduate students as well as faculty. If the university is able to make significant headway in this regard, it will help make it one of the premier institutions that prepares its graduates for careers that are more globally focused. The College of Agriculture and Life Sciences (CALS) has taken positive steps by naming a faculty member to lead these efforts, beginning an international minor and certificate program and expanding study abroad opportunities. More of these proactive efforts will help the college become truly internationalized.

Theoretical Framework

Much research has been conducted among business schools regarding global competencies. Zeliff (1995) states that important competencies for business students include the areas of economic concepts, global organizations, finance, marketing, social and cultural factors and trade. Gorchels (1999) posits that cultural adaptability and work ethic are traits that could be hired into an internationally-related position, but she goes on to say that adaptability is likely to increase with exposure to different cultures. To help meet this need, people who have had foreign internships, study abroad or some type of international experience become stronger candidates.

In a comparison of US and European business schools it was concluded that European schools: “sought higher levels of internationalization, were more likely to require international business courses, placed more emphasis on international experience, were more likely to offer specialized degrees in international business, had more faculty with greater international expertise and involvement, paid more institutional attention to faculty internationalization, and had greater institutional linkages and involvement” (Fugate & Jefferson, 2001, pp. 3-4). This demonstrates how far US business schools still need to go in this regard.

Likewise, colleges of agriculture are searching for ways to better integrate an international component into its tripartite mission of research, teaching and extension. Acker (1998, 1999 & 2000) has written numerous articles related to this topic and its importance. GASEPA (Globalizing Agricultural Science and Education Programs for America) is a federal initiative led by land-grant universities to promote the global competence of faculty, students and stakeholders in agricultural and related programs across US campuses. The mission states that “an international dimension is incorporated into teaching, research and extension programs so that (1) our graduates understand and appreciate the global environment in which agriculture functions, (2) our research and extension programs have access to the best ideas and technologies regardless of where they are generated or developed, and (3) the points noted above strengthen US international competitiveness within a sustainable global agricultural system” (GASEPA, 2003).
It is very apparent that we have quite a ways to go to globalize colleges of agriculture based upon a review of literature regarding internationalization of agricultural education and related disciplines. Moore and Woods (2003) reported the following major findings: a) internationalization of agricultural education programs has positive effects on college students, university personnel and stakeholders; b) the internationalization of programs has been limited in scope; c) the internationalization of programs is a response to and a reflection of globalization; and d) effective teaching and learning in this regard requires a global classroom – where cultural differences can become familiar.

At the 2003 AIAEE annual conference, Andreasen (2003) found that there were a number of external and internal barriers affecting international participation. Among the external reasons cited were: lack of administrational support, interference with tenure, lack of time, financial constraints, lack of language skills, conflict with classes and lack of opportunities. Internal reasons included: fear of different cultures, ethnic prejudices, cultural biases, lack of desire, not being able to communicate, fear of political unrest, a “sense of American superiority,” and a fear of lost opportunities. For institutions to truly advance in the area of internationalization, steps will need to be taken to reduce or eliminate these potential barriers.

**Purpose/Objectives**

The purpose of this study was to determine the best means to integrate global concepts into courses, develop new internationally-focused courses, and utilize mechanisms for study abroad experiences for students. Consequently, the objectives of the study were as follows: A) describe student respondents’ knowledge of and attitude toward international learning opportunities; B) describe and determine differences between respondents’ perceptions of the importance of, and the degree to which they felt they possessed a set of attributes related to skills possessed by students involved in international activities, and to subsequently develop indices of needs; and, C) to correlate these differences among various demographic variables.

**Methods/Procedures**

The target population for this study (N=3861) was comprised of all undergraduate and graduate students in the College of Agriculture and Life Sciences (CALS) at the University of Florida. To conduct the study, a random sample (n=800) of students was drawn from the university’s student records database. The study, developed as an online Web form, utilized a 79-item, researcher-developed survey instrument that was descriptive in nature. The instrument included sections designed to measure respondents’ perceptions, beliefs and intentions related to international involvement while a student, as well as related demographic questions. All items, with the exception of demographics and dichotomous choice questions, utilized five-point Likert-type scales for each response stem.

The demographic variables focused on for this study included respondents’ gender, year in college, primary language spoken and whether or not they had grown up on a working farm. Other variables of interest included respondents’ self perceived knowledge, as well as their ratings of the importance and the degree to which they felt they possessed a set of attributes formulated as statements and related to skills exhibited by students involved in international activities.
To assure face and content validity, a panel of experts reviewed the questionnaire, and it was subsequently revised to reflect panel members’ suggestions. The resulting instrument was then pilot-tested with a sub-sample \( n=84 \) of students who were not included in the final study. The results of the pilot study were used to further refine the instrument for use in the actual study.

The final survey was developed as an online, Web-based survey instrument, using form development and data collection procedures as outlined by Dillman (2000). To initiate the survey, respondents first received an email cover letter informing them about the Web-based survey and providing them with a respondent code to keep track of respondents and non-respondents. After the initial posting of the survey, respondents were given two weeks to return it. A follow-up reminder was then sent to non-respondents. A third and final fourth reminder were then sent at ten day intervals. Data was directly captured in a database for subsequent statistical analysis. To control for non-response error, date of submittal was tracked in the database to facilitate comparison of early and late respondents on the variables of interest. No differences were observed.

Data was directly captured in a database for subsequent statistical analysis via SPSS for basic and inferential statistics. The data was reviewed prior to data analysis for completeness and accuracy. In those cases where significant amounts of data were omitted, the entire record was not utilized. After data collection, survey response data was utilized to assess reliability of the instrument, resulting in a Chronbach’s alpha for the overall scale of \( \alpha = .87 \).

**Results of the Study**

Of the 800 students surveyed, 50 instruments were returned due to unusable addresses, which reduced the accessible sample to \( n=750 \). Of this number, 147 responded, for a response rate of 20%; however, four of the respondents did not answer any of the questions on the survey, and one was a duplicate. The resulting sample included 40.8% \( (n=58) \) male and 57.7% \( (n=82) \) female respondents. Two students did not answer this question. Of those who did respond, the majority were undergraduates: 27.9% were college seniors \( (n=39) \), 15.7% were juniors \( (n=22) \), 12.1% were sophomores \( (n=17) \) and 9.3% \( (n=13) \) were freshmen, while 18.6% of respondents \( (n=26) \) were master’s level graduate students and 16.4% \( (n=23) \) were Ph.D. students.

In response to a question asking respondents to describe their family’s ancestry, a majority of students who responded (67.7%) indicated that they were of European/Caucasian ancestry \( (n=90) \). The second highest category of response (11.3%) was Mexican/Latin American ancestry \( (n=15) \) followed by Asian \( (9.8\%, n=13) \). Other responses included African American \( (3.8\%, n=5) \) and Puerto Rican \( (3.0\%, n=4) \). Arab, Native American and “other Caribbean” were each chosen by two respondents \( (1.5\% \text{ each}) \).

Respondents were asked to describe their primary or first language. Of those who responded, the majority \( (79\%) \) indicated that English was their primary language \( (n=109) \), followed by Spanish \( (13\%, n=18) \). Nearly eight percent \( (7.9) \) of respondents indicated other primary languages, including Chinese \( (2.2\%, n=3) \) French \( (0.7\%, n=1) \) and Portuguese \( (0.7\%, n=1) \). Six respondents indicated “other” languages, which included Tamil, Arabic, Vietnamese and Turkish. Respondents were also asked whether they had grown up on a working farm. Of those who responded, 88.5% \( (n=123) \), answered no, while 11.5% \( (n=16) \) answered yes.
In order to ascertain if students had had prior international experiences, respondents were asked if they had taken part in a series of nine international activities typically available to college students. Of those who responded, 89.4% (n=127) had eaten at an international restaurant, while 56.3% had interacted with international exchange students, 47.2% had attended an international festival, 49.3% had listened to an international speaker in a class, 33.8% had taken a class focused on international issues, 8.5% had hosted an international visitor, 5.6% had participated in a semester-long study abroad program, 4.9% had participated in an international study tour and 2.8% (n=4) had taken part in a church mission trip to another country.

To achieve objective one, which was to describe respondents’ knowledge of and attitude toward participating in international involvement activities available to them as students, respondents were asked to indicate how knowledgeable they were in regards to international activities available through their undergraduate college department, their college of agricultural and life sciences, their university and in general outside the university. Responses ranged on a scale from 1=not knowledgeable to 5 = very knowledgeable. Results showed that respondents were most knowledgeable about activities in general outside the university (M=3.13, SD=1.18), followed by at the university (M=2.83, SD=1.18), in their department (M=2.10, SD=1.08) and in their college of agricultural and life sciences (M=2.00, SD=.95). Means and frequencies were calculated for each response item, then averaged together to create a summed index. Standardized item alpha for the resulting perceived knowledge of international activities construct was α = .76, and these are noted in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Respondents’ Perceived Level of Knowledge with respect to International Involvement Activities</th>
<th>N</th>
<th>M*</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am knowledgeable about international involvement activities:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In general outside the university</td>
<td>142</td>
<td>3.13</td>
<td>1.18</td>
</tr>
<tr>
<td>At the university</td>
<td>142</td>
<td>2.83</td>
<td>1.18</td>
</tr>
<tr>
<td>In the college of agricultural and life sciences</td>
<td>142</td>
<td>2.00</td>
<td>0.95</td>
</tr>
<tr>
<td>In my department</td>
<td>141</td>
<td>2.10</td>
<td>1.08</td>
</tr>
<tr>
<td>Grand Mean</td>
<td>142</td>
<td>2.86</td>
<td>8.16</td>
</tr>
</tbody>
</table>

* Mean based on scale of 1=Not Knowledgeable, 2=Slightly Knowledgeable, 3=Somewhat Knowledgeable, 4=Knowledgeable, and 5=Very Knowledgeable.

To assess attitude, respondents were asked to indicate their overall perceptions toward participating in international involvement programs and activities. Response items utilized a five point semantic differential scale, anchored by a set of five bipolar adjectives - good/bad; beneficial/harmful; positive/negative; foolish/wise and favorable/unfavorable. After transforming reverse coded items, results indicated that respondents were fairly positive in their attitudes toward participating in international involvement programs and activities. Means and frequencies were calculated for each response item, then averaged together to
create a summated index. Standardized item alpha for the resulting attitude toward participating in international activities construct was $\alpha = .92$. (See Table 2).

Table 2

**Respondents’ Attitude toward Participating in International Involvement Activities**

<table>
<thead>
<tr>
<th>Response scale item:</th>
<th>$N$</th>
<th>$M^*$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad/good</td>
<td>137</td>
<td>4.47</td>
<td>0.92</td>
</tr>
<tr>
<td>Harmful/beneficial</td>
<td>138</td>
<td>4.47</td>
<td>0.85</td>
</tr>
<tr>
<td>Positive/negative</td>
<td>136</td>
<td>4.46</td>
<td>0.85</td>
</tr>
<tr>
<td>Foolish/wise</td>
<td>133</td>
<td>4.07</td>
<td>1.17</td>
</tr>
<tr>
<td>Unfavorable/favorable</td>
<td>135</td>
<td>4.33</td>
<td>0.93</td>
</tr>
</tbody>
</table>

**Grand Mean**  

<table>
<thead>
<tr>
<th>$N$</th>
<th>$M^*$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>138</td>
<td>4.37</td>
<td>.81</td>
</tr>
</tbody>
</table>

*Mean based on a five-point semantic scale where a higher mean represents more positive attitudes.

Objective two was to describe and determine differences between respondents’ perceptions of the importance of, and the degree to which they felt they possessed a set of attributes related to skills possessed by students involved in international activities, and to subsequently develop indices of needs.

To conduct the analysis, a five-point Likert scale was utilized to measure self-perceived levels of importance and possession across nine attribute items. Mean ratings were categorized according to the following standard: means ranging from 1.00 – 1.49, low; 1.50 – 2.49, below average; 2.50 – 3.49, average; 3.50 – 4.49, above average, and; 4.50 – 5.00, high. Means and frequencies were calculated for each attribute item, then importance attributes and possession attributes were averaged together to create a summated index. Standardized item alphas for the resulting importance of attribute and possession of attribute constructs was $\alpha = .86$.

Descriptive results showed that respondents perceived the overall importance of the set of attributes as above average ($M=4.17$, $SD=0.79$). One item in this construct, ability to interact with people from other parts of the world ($M= 4.52$, $SD=0.68$) was categorized as ‘high’ and all of the rest were in the ‘above average’ range. The overall degree to which respondents felt they possessed the set of attributes was rated to be average ($M=3.47$, $SD=0.64$). Five items in this construct were categorized as ‘above average.’

Differences between perceived importance and perceived possession for each attribute were then calculated to determine areas with the greatest need. Five attributes had a difference of 0.80 or greater, and these were deemed as most important. In rank order these include (difference noted in parentheses): “Knowledge of what other countries’ culture has added to U.S. society” (1.23), “Knowledge of global agricultural export markets and marketing systems” (0.99), “Knowledge of the economic issues between the U.S. and other countries” (0.96), “Knowledge of the humanitarian issues between the U.S. and other countries” (0.94), and “Knowledge of the political issues between the U.S. and other countries” (0.88). These results are noted in Table 3.

Objective three was to correlate attribute importance and possession constructs with respect to selected demographic variables, and develop a predictive model of student
respondents’ attitudes toward and intent to participate in international involvement activities. In order to conduct this analysis, a correlation matrix of Pearson’s product moment correlations was first calculated to explore relationships between the demographic variables of gender, year in college, primary language spoken, and whether or not the respondents had grown up on a farm (urban/rural background) and the attribute importance and possession constructs. Results showed moderate significant correlations between year in college and the importance of attribute construct (r=.18, p < .03) and between the importance and possession of attribute constructs (r=.37, p < .01).

Table 3

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Importance Mean</th>
<th>SD</th>
<th>Possession Mean</th>
<th>SD</th>
<th>* Difference: Imp. - Poss.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding the differences between developed and developing nations</td>
<td>4.09</td>
<td>0.75</td>
<td>3.82</td>
<td>0.81</td>
<td>0.27</td>
</tr>
<tr>
<td>Awareness of the cultures of other countries</td>
<td>4.29</td>
<td>0.75</td>
<td>3.82</td>
<td>0.88</td>
<td>0.47</td>
</tr>
<tr>
<td>Knowledge of the economic issues between the U.S. and other countries</td>
<td>4.08</td>
<td>0.80</td>
<td>3.12</td>
<td>0.93</td>
<td>0.96</td>
</tr>
<tr>
<td>Knowledge of the political issues between the U.S. and other countries</td>
<td>4.18</td>
<td>0.81</td>
<td>3.30</td>
<td>0.96</td>
<td>0.88</td>
</tr>
<tr>
<td>Knowledge of the humanitarian issues between the U.S. and other countries</td>
<td>4.06</td>
<td>0.90</td>
<td>3.12</td>
<td>0.96</td>
<td>0.94</td>
</tr>
<tr>
<td>Knowledge of global agricultural export markets and marketing systems</td>
<td>3.84</td>
<td>0.97</td>
<td>2.85</td>
<td>1.01</td>
<td>0.99</td>
</tr>
<tr>
<td>Knowledge of what other countries’ culture has added to U.S. society</td>
<td>4.08</td>
<td>0.80</td>
<td>3.37</td>
<td>0.93</td>
<td>1.23</td>
</tr>
<tr>
<td>Ability to interact with people from other parts of the world</td>
<td>4.52</td>
<td>0.68</td>
<td>3.94</td>
<td>1.08</td>
<td>0.58</td>
</tr>
<tr>
<td>Ability to function as a citizen in a global society</td>
<td>4.42</td>
<td>0.77</td>
<td>3.97</td>
<td>0.91</td>
<td>0.45</td>
</tr>
</tbody>
</table>

**Overall Totals** 4.17 0.56 3.47 .64

* Difference = Importance Mean – Possession Mean.

To develop a predictive model, multiple linear regression using the stepwise method was subsequently conducted, first using the attitude toward participating in international programs and activities as the dependent variable, and gender, year in college, primary language spoken and urban/rural background as independent variables. The regression
model was not significant, so a second model was run using a one item measure of intent to participate in international activities (M=3.24, SD=1.17) as the dependent measure, and gender, year in college, primary language spoken, urban/rural background, knowledge and attitude as independent variables. The regression was highly significant (p < .01), explaining 15% of the variance in intent. Year in college was the strongest predictor of intent, followed by attitude, primary language spoken and perceived knowledge. Gender and urban/rural background were not significant predictors in the model (see Table 4).

Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>SE</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived knowledge index</td>
<td>.174</td>
<td>.012</td>
<td>2.09</td>
<td>.04</td>
</tr>
<tr>
<td>Attitude index</td>
<td>.183</td>
<td>.118</td>
<td>2.23</td>
<td>.03</td>
</tr>
<tr>
<td>Year in college</td>
<td>.223</td>
<td>.069</td>
<td>2.49</td>
<td>.01</td>
</tr>
<tr>
<td>Primary language spoken</td>
<td>.179</td>
<td>.056</td>
<td>2.09</td>
<td>.04</td>
</tr>
</tbody>
</table>

Results indicated that the greater the perceived knowledge of international activities and programs, combined with the more positive the attitude, the more advanced in years in higher education and the incidence to which languages other than English were the primary language spoken, the more likely it was that student respondents intended to participate in international programs and activities.

Conclusions and Recommendations

Students revealed only slight to some knowledge about international involvement activities. It was interesting to note that of the four levels that were assessed, students were more knowledgeable of opportunities outside of the university followed by university-level opportunities, then college and departmental opportunities. This shows that more needs to be done to increase general awareness about opportunities that exist for students – particularly at the college and departmental level. Increased exposure is a necessary first step to make significant headway towards internationalizing the college of agriculture and life sciences.

The attitudinal findings relating to participating in international involvement activities are very encouraging. Respondents were very positive that international involvement is good, beneficial, positive, favorable and wise. The lowest item measured was on the foolish/wise scale, but nevertheless this was still positive (4.07). The value and worth of international involvement for the students was clearly displayed through these results.

Students were in agreement on the importance of the international competence attributes. They rated each of the attributes above average overall. When compared with their possession of these attributes, overall they felt that they were average in possession of these skills. Examination of individual attributes show differences between importance and possession particularly for the areas of: “Knowledge of what other countries’ culture has added to U.S. society,” “Knowledge of global agricultural export markets and marketing systems,” “Knowledge of the economic issues between the U.S. and other countries,” “Knowledge of the humanitarian issues between the U.S. and other countries,” and “Knowledge of the political issues between the U.S. and other countries.”
Steps need to be taken to help develop competence across these critical areas. This could be done through integrating these concepts into ongoing courses, creating new course opportunities, providing international related seminars, as well as encouraging student involvement in a myriad of international opportunities.

Further analysis of the attribute data revealed that there was a direct correlation between a student’s year in college and the overall importance of the attributes and between importance and possession. This could be interpreted that the longer a student is in the college the more aware they become of the importance of having international skills, as well as how much growth they need in these areas. Additionally, this could very well be a function of a person’s growth and maturity that develops over time.

One of the most significant findings of this study related to one’s attitude. After year in college, attitude provided the strongest indication as to intention to get involved in international opportunities. Attitude was followed by language spoken and perceived knowledge in regards to significance. Based upon this finding, the college would make the greatest headway towards internationalization by taking steps to improve students’ mind-set toward international involvement, especially in the junior and senior years of a student’s program. Improved attitudes could be achieved through increasing overall awareness of international opportunities and providing positive first-hand experiences.

Educational Implications

Studies such as this are important to effectively facilitate internationalization of students, colleges and universities. If we are to be developing globally ready graduates, we need to be providing the curriculum and experiences that will make this happen. We need to implement the components that are going to be the most effective and utilize ways that will serve to get students actively involved.

Based on the results of this study, steps should be taken that will help to ensure the implementation of the GASEPA mission into the college of agriculture and life sciences. This study has identified a number of global focus areas for the college – particularly those things that will lead to increased awareness of opportunities and steps that will help improve attitudes toward international participation. Innovative strategies are needed that will best communicate about international opportunities. Future studies will examine the effectiveness of the resulting changes in international opportunities.

References


