

**Assessing Changes in Intercultural Sensitivity among Agricultural Students
Exposed to International Experiences**

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Abstract

The purpose of this study was to assess changes among Agriculture college students at a land-grant university who participated in a designated international I-course or a faculty-led short study abroad program to America, Asia/Oceania, and Europe. Students' intercultural sensitivity was assessed using the Intercultural Development Inventory (IDI). A nonequivalent group design pretest, posttest, with a comparison group, was used for data collection and analysis. One hundred and sixty-two students, clustered into five groups, participated in the study. The data were analyzed using split-plot factorial design 5 x 2. Findings indicated that all five groups were in the Ethnocentric Phase of the developmental continuum for both the pre and posttest, among the groups regarding development of intercultural sensitivity as a result of an international experience or I-course. The authors recommend that course facilitators include facets of intercultural dimensions in the curriculum as a means for assisting students acquire intercultural competence. Interventions should be designed according to individual levels of intercultural sensitivity. Reflexive journaling and group discussions should be used as an integral part of institutional curricular enhancement plans to increase intercultural competence. Institutional, intercultural goals should include moving students toward the acceptance stage of the Developmental Model of Intercultural Sensitivity (DMIS). Further research should identify specific variables related to developing intercultural sensitivity among college students.

Keywords: Education; higher education; students issues; curriculum development; competencies; program evaluation; managing change; professional development

Introduction

Monocultures provide a perceived safe environment without the need to adapt or modify one's behavior to be accepted or understood by the group. However, monoculture environments do not exist in modern society. The internet and mass communications have created a global environment where cultural pluralism is the norm rather than the exception (Chen, 2008).

Employers seek interculturally competent professionals who are capable of working in diverse environments with the ability to recognize, respect, and adapt their behavior to different cultures (Ashwill, 2004; Barrick, Samy, Gunderson, & Thoron, 2009; Gacel-Avila, 2005; Hofstede, Van Deusen, Mueller & Charles, 2002; Haeger, 2007; Karbasioun, Beimans, & Mulder, 2007). American higher education institutions are responsible, in part, for developing interculturally competent graduates to support global workforce needs by educating students to embrace emerging international and intercultural challenges (Lindner, Dooley, & Wingenbach, 2003; Vande Berg, 2003). Higher education creates and supports multicultural environments by offering students numerous multicultural and intercultural experiences such as long and short study abroad programs, internships and international dimension courses, denoted hereafter as *I* courses (Anderson, 2004; Bayles, 2009; Brooks, Frick & Bruening, 2006; Connell, 2006; Ingram, Smith-Hollins, & Radhakrishna, 2009; Paige, Cohen, Mikk, Chin, Lassegard & Meagher, 2009). In fact, numerous higher education institutions are convinced that students must be educated in a global context to develop intercultural skills such as showing respect, appreciation, and understanding for people from cultures different than themselves (Ashwill, 2004; Bhawuk & Brislin, 1992; Connell, 2006; Paige, et al., 2009; Zhai & Scheer, 2002).

However, research to document the impact of higher education institutional efforts to increase students' intercultural competences shows conflicting outcomes. Ayas (2006) found no significant difference in developmental and perceived levels of intercultural sensitivity among medical students at George Washington University who participated in an international experience and those who did not. Keefe (2008) found no significant difference in cultural competence among students who attended short-term study abroad courses outside the United States and those who did not. Altshuler et al. (2003) found no significant difference between people who received training in intercultural sensitivity among health care providers after an intercultural intervention and those who did not. Further, Patterson (2006) found no change in intercultural sensitivity among students who attended faculty-led short study abroad programs and those who did not. Patterson's study noted that simply spending time in another culture did not necessarily equate to people understanding or accepting others. Bok (2006) pointed out that the reason American students do not change in their level of intercultural sensitivity during their study abroad experiences are due to those experiences being "too short, too isolated from the surrounding society, and too often situated in cultures similar to our own" (p. 247).

In contrast, Straffon (2003) found a positive correlation between increasing intercultural competence and the length of time students attended an international school and lived within the host country. These results are similar to the experience of Fulbright scholars teaching outside the United States as Emert (2008) found positive growth in intercultural competence overall among twelve teachers teaching abroad. The teachers in that experience reported a heightened ability to interact effectively and appropriately with culturally diverse individuals by understanding better the various differences and similarities between cultures. Carter (2006) found that intercultural interventions like study abroad, participation in discussions, relationships with people of differences, and exposure to a diverse campus changed students' intercultural sensitivity. Conway (2008) also found significant differences in changes in intercultural sensitivity among community college employees who participated in a six-year intercultural competence professional development program. In another study, Bok (2006) found that one or two weeks of faculty-led short study abroad programs were too short to impact students' level of

intercultural sensitivity. Despite conflicting results, higher education institutions continue to encourage students to participate in international opportunities with the assumption that it is beneficial for their development as young adults.

Theoretical Framework

The Developmental Model of Intercultural Sensitivity (DMIS) is a theoretical framework for explaining how people react to different cultures (Bennett, 1986, 1993). The DMIS is based on grounded theory that explains how people face cultural differences in predictable ways as they acquire intercultural competence. Bennett underpinned his theory with a constructivist approach and identified six stages that people experienced during their acquisition of intercultural competence. The stages represent a progression of *worldview* that begins with denial and moves toward defense, minimization, acceptance, adaptation and finally integration. Denial of cultural differences is the stage where the subject's culture is experienced as the only one and contact with other cultures has been very limited. Defense against cultural differences is the stage where the subject's culture (or their adopted culture) is experienced as superior to others. Minimization of cultural differences is the stage where the subject recognizes some differences; however, one maintains that all people are similar in nature. Acceptance of cultural differences occurs when the subject recognizes and respects differences between cultures. Adaptation to cultural differences is the stage where the subject imagines "how the other person is thinking" (Paige et al., 2003, p. 471). Finally, integration of cultural differences results in the subject feeling comfortable moving among a variety of cultures (Bennett, 1986, 1993; Hammer et al., 2003; Paige et al.). The stages are further dichotomized into *ethnocentric* (denial, defense and minimization) and *ethnorelative* (acceptance, adaptation, and integration) groups. The DMIS was used by Hammer, et al. (2003) to develop an instrument to measure intercultural sensitivity called the Intercultural Development Inventory (IDI).

Intercultural sensitivity, defined as an understanding of the importance of cultural differences and different points of view of people from other cultures (Hammer et al., 2003), can be used a predictor of intercultural effectiveness and is associated with the potential to exercise intercultural competence (Bhawuk & Brislin, 1992; Hammer et al., 2003). "Greater intercultural sensitivity is associated with greater potential for exercising intercultural competence" (Hammer et al., p. 422). Intercultural competence is the ability to interact with people from different cultures in a way that avoids misunderstandings and creates opportunities (Hammer et al., 2003).

Intercultural sensitivity can be learned and developed over time. An interculturally sensitive person is able to detect and differentiate relevant and irrelevant cultural differences (Bhawuk & Brislin, 1992; Connell, 2006) and can show respect, appreciation, and understanding for people from different cultures. People who are effective at working with cultures outside their own are "willing to modify their behavior as an indication of respect for the people of other cultures" (Bhawuk & Brislin, 1992, p. 416). People who are interculturally sensitive are eager to learn the differences between cultures, and most importantly, respect differences, including values and beliefs thereof, even when they may not approve of or agree with the way a particular culture responds to specific issues.

Intercultural experiences such as comprehensive intercultural programs, international courses, field trips, intercultural training, or opportunities for travel abroad could assist in the progression from one stage to another, and change people's personal and group worldviews. Institutions' intercultural initiatives include many of these activities, going from basic training to strategic and well-designed comprehensive programs to increase students' intercultural competence (Altshuler et al., 2003; Anderson, 2004; Busby, 1993; Carter, 2006; Emert, 2008; Fretheim, 2007).

Purpose of the Study

This study sought to examine the effect of participating in college-supported *I*-courses and faculty-led short study abroad programs to America, Europe and Asia/Oceania on students' level of intercultural sensitivity measured by the Intercultural Development Inventory (IDI) (Hammer, 2008; Hammer, et al., 2003; Paige, Jacobs-Cassuto, Yershova, & DeJaeghere, 2003). Further, this study sought to test the following null hypothesis: There is no statistically significant difference in the degree of change in intercultural sensitivity among college students exposed to intercultural experiences, *I* courses and faculty-led short study abroad courses to America, Europe, Asia and Oceania, as measured by the IDI.

Methods

Instrumentation

This study used the IDI v.2 to measure students' stage of intercultural sensitivity. The IDI is a theory-based, statistically reliable, psychometric standardized, 50-item instrument which measures cognitive structures (Hammer, et al., 2003). The IDI can be used to assess intercultural sensitivity for people and organizations (Hammer, 2008) and identifies the personal or group Overall Developmental Intercultural Sensitivity (ODIS) and the Overall Perceived Intercultural Sensitivity (OPIS). The ODIS identifies the developmental stage where the individuals fall naturally along the intercultural development continuum. The OPIS identifies where the individual places him or herself along the intercultural development continuum. The IDI is divided into six stages of development and each stage represents a way of experiencing differences. The first three stages (denial, defense, and minimization) are defined as ethnocentric, meaning that the subject's culture is the center of his or her reality; the second three stages (acceptance, adaptation, and integration) are defined as ethnorelative, meaning that the subject's culture is experienced in the context of other cultures (Bennett, 1986, 1993; Hammer et al., 2003; Paige et al., 2003). The IDI measures five of the six stages of the DMIS proposed by Bennett: Denial/Defense (DD), Reversal (R), Minimization (M), Acceptance/Adaptation (AA), and Encapsulated Marginality (EM) (Hammer, 2003; Paige, 2003; Straffon, 2003).

Instrument Validity and Reliability

The IDI has been tested for validity and reliability using confirmatory factor analysis, reliability analysis, and construct validity tests. Cronbach's alpha coefficients for the five main dimensions of the DMIS are: Denial/Defense scale (13 items), $\alpha = 0.85$; Reversal scale (9 items), $\alpha = 0.80$; Minimization scale (9 items), $\alpha = 0.83$; Acceptance/Adaptation scale (14 items), $\alpha = 0.84$; and Encapsulated Marginality scale (5 items), $\alpha = 0.80$ (Hammer et al., 2003).

Research Design and Data Analysis

The study used nonequivalent group design (pretest, posttest with comparison group) (Trochim, 2009). The data collected were analyzed using a split-plot factorial design 5 x 2. Analysis compared each groups' Intercultural Sensitivity levels to determine if differences existed between ODIS and OPIS.

Variables

The dependent variables were students' degree of change as a result of an experience as measured by the ODIS and OPIS. Both of these measures consisted of a scale ranging from 55 to 145 points, 55 points represent the lowest level of intercultural sensitivity, and 145 points represent the highest level of intercultural sensitivity.

The independent variable was college student's participation in intercultural experiences (*I*-courses or faculty-led short study abroad programs to America, Europe and Asia/Oceania) from December 2008 to August 2009. *I*-courses were undergraduate three-credit-hour, semester-long courses designed to encourage students to critically analyze one or more cultures. *I*-courses offered by the college were International Agriculture and Animals of the World. The faculty-led short study abroad programs were for-credit courses offered by professors and consisted of a trip outside the United States in addition to a variety of lectures and written assignments. The average length of the trip was nine days. Additionally, one of the experiences studied was a long-term experience (thirteen weeks) to Brazil.

For comparison purposes, a control group was also included in the study. The comparison group was formed with students who did not participate in any institutional intercultural experience, including *I*-courses or faculty-led short study abroad programs supported by the college from December 2008 to August 2009.

Population

The target population consisted of all undergraduate students enrolled during the 2009 spring semester in the College of Agriculture at an American land-grant university ($N = 1,751$). One hundred ninety-three students ($n = 193$) completed the pretest, and one hundred and sixty-two students ($n = 162$) completed the study pre and posttest. The students were divided into five groups – four treatment groups and one comparison group (Table 1).

Table 1
Comparison and Treatment Groups (n = 162)

Group	Type of Intervention	Number of Students
1	Comparison (No formal institutional intervention)	28
2	<i>I</i> -courses	35
3	Faculty-led short study abroad program to America (Honduras, Brazil, Costa Rica, and Nicaragua)	33
4	Faculty-led short study abroad to Europe (France and Italy)	36
5	Faculty-led short study abroad program to Asia and Oceania (New Zealand, Thailand, China, Japan)	30
TOTAL		162

Findings

The study participants included 48% male and 52% female. Seventy percent of the population was between 18 and 21 years old. Junior students were the largest group represented in the study with 32% percent of the sample, followed by seniors with 25%. Twenty-eight percent of the students reported speaking another language, but only 9% reported that they spoke another language with more than 50% proficiency. Sixty-seven percent of the participants had experience traveling abroad but more than half (52%) of the students has spent one month or less traveling outside the United States.

All groups measured between 78.40 and 89.64 on the ODIS profile, placing the groups in the ethnocentric stage (Tables 2 and 3). Further, all groups measured between 115.18 and 119.62 on the OPIS profile, indicating they were in the ethnorelative stage of the DMIS dimensions (Tables 2 and 3).

Table 2

Mean of Intercultural Development Inventory (IDI v. 2). Overall Developmental Intercultural Sensitivity -Pretest and Posttest and Perceived Intercultural Sensitivity Pretest and Posttest by Type of Intercultural Intervention (Group)

Group	Type of Intercultural Intervention	Developmental Pretest	Developmental Posttest	Perceived Pretest	Perceived Posttest
1	Comparison Group	82.60	78.40	116.54	115.16
2	I Courses	86.57	88.71	117.37	118.31
3	FLSSAE America	85.11	85.71	118.16	118.62
4	FLSSAE Europe	84.53	83.03	117.24	117.05
5	FLSSAE Asia/Oceania	89.64	85.54	119.62	119.03

Note: FLSSAE = Faculty-led short study abroad experience. Total scale from 55 to 145, Denial/Defense (DD) or Reversal (R) 55-85; Minimization (M) 85.10-115; Acceptance/Adaptation 115.1-145

Table 3

Intercultural Development Inventory (IDI v.2) Scales of Overall Developmental Intercultural Sensitivity -pretest and posttest and Perceived Intercultural Sensitivity -pretest and posttest

Group	Type of Intercultural Intervention	Developmental Pretest	Developmental Posttest	Perceived Pretest	Perceived Posttest
1	Comparison Group	DD/R	DD/R	AA	AA
2	I Courses	M	M	AA	AA
3	FLSSAE America	M	M	AA	AA
4	FLSSAE Europe	DD/R	DD/R	AA	AA
5	FLSSAE Asia/Oceania	M	M	AA	AA

Note: FLSSAE Faculty-led short study abroad experience, total scale from 55 to 145, Denial/Defense (DD) or Reversal (R) 55-85; Minimization (M) 85.10-115; Acceptance/Adaptation 115.1-145

The information provided by the IDI v. 2, pretest and posttest was analyzed using a split-plot factorial design 5 x 2 for the ODIS and OPIS of the different groups studied (comparison group, I-courses and faculty-led short study abroad programs) in relation to the time (pre- and posttest) the interventions occurred (Group * Time) (Tables 4 & 5). The coefficient alpha (Cronbach) for the study was .70 (Creswell, 2003).

Table 4

Test of Between and Within Subjects Contrast for the Intercultural Development Inventory: Overall Developmental Intercultural Sensitivity (ODIS) by Group -pretest and posttest

Type of Effect	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Between-Subjects Effects	Group	1656.755	4	414.189	1.293	.275 NS
	Error	50309.495	157	320.443		
Within-Subjects Effects	Time	72.895	1	72.895	.767	.382 NS
	Time*Group	326.484	4	81.621	.859	.490 NS
	Error (Time)	14916.016	157	95.006		

Note NS Not significant * $p < .05$

Table 5

Test of Between and Within Subjects Contrast for the Intercultural Development Inventory (IDI): Overall Perceived Intercultural Sensitivity (OPIS) by Group -pretest and posttest

Type of Effect	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Between-Subjects Effects	Group	409.02	4	102.25	2.136	.079 NS
	Error	7517.53	157	47.88		
Within-Subjects Effects	Time	.451	1	.451	.033	.855 NS
	Time*Group	38.256	4	9.564	.709	.587 NS
	Error (Time)	2117.131	157	13.485		

Note. NS Not significant * $p < .05$

There were no statistically significance differences ($p < .05$) between subjects' effects (group) within subject effects (time –pre and posttest –) or within subjects in the interaction of time and group for the IDI v. 2 Profile: ODIS and OPIS. Therefore, the null hypothesis was accepted indicating, there is no statistically significant difference in the degree of change in

intercultural sensitivity among college students exposed to intercultural experiences, *I* courses and faculty-led short study abroad courses to America, Europe, Asia and Oceania, as measured by the IDI.

Conclusion, Recommendations and Future Research

It was concluded that the participants in the study did not change their *worldview* (ODIS or OPIS) as a result of participating in an international experience. This conclusion coincides with Ayas (2006), Altshuler et al. (2003), Keefe (2008), and Patterson (2006) findings previously discussed. All groups studied (comparison group, *I*-courses and faculty-led short study abroad programs) at the time of the assessment were in the ethnocentric phase of the ODIS continuum for both, the pretest and posttest, indicating that their culture was the center of their reality. However, in contrast, all groups studied placed themselves in the ethnorelative phase (Acceptance/Adaptation) for both the pre-and posttest, indicating that they believed that a culture can only be understood in the context of other cultures.

The participants overestimated their intercultural sensitivity. All participants considered themselves to be in the Acceptance/Adaptation stage of the DMIS when, in reality, they were in the Denial/Defense or Minimization stage. The perceived intercultural sensitivity could limit participants' willingness to increase their level of intercultural sensitivity, resulting in no significant differences among the groups.

The comparison groups and the faculty-led short study abroad program to Europe at the time of the assessment were in the Defense/Denial/Reversal stage of the IDI, interpreted as subjects' culture was experienced as the only one, resulting in polarizing cultural differences. Participants in the *I*-courses and in the faculty-led short study abroad programs tested in the minimization phase of the IDI, highlighting cultural commonality and universal values while masking cultural differences.

The results of this study could be explained in at least three ways; by the absence of participants' framework for cultural differences, by the lack of opportunity to improve participants' intercultural sensitivity during the experience, or by the lack of interest in improving their intercultural competence (Altshuler et al., 2003; Briers, Shinn & Nguyen, 2010). Students' experiences are faulty as it relates to international travel and studying abroad in regard to improving levels of intercultural sensitivity. Perhaps students over-focus their international experiences on events such as sightseeing and tourism as opposed to gaining an awareness of and adopting cultures other than their own. If this is true, the case could be made that institutions of higher education should increase their efforts to better internationalize on-campus students by emphasizing intercultural competence in all courses. To that end, efforts should be increased by all university faculty to celebrate diversity in their respective course offerings and help students understand and empathize with people of various cultures. Specifically, existing non-*I*-courses should be enhanced to include diversity issues affecting other cultures so that all American students can better relate to global issues and become more interculturally competent.

It is recommended that institutions of higher education interested in developing interculturally competent graduates, professors, and staff members adopt a comprehensive model of intercultural education. Efforts should be devoted to improving the existing *I*-course offerings to include a greater emphasis on intercultural competence and awareness of American students.

Further, faculty charged with facilitating courses involving intercultural experiences (i.e., study abroad trips) should highlight ways for students to develop intercultural competence as a result of taking the course (Briers et al., 2010). Curricular materials should be examined and perhaps enhanced to assist in this regard. Such enhancements could include a series of intermittent reflexive journal assignments designed to assist students in navigating their thoughts related to their intercultural diversity experience while studying abroad. Other suggestions

include requiring American students to board with host country nationals during their experience and interviewing a variety of people from subcultures in an attempt to better understand, appreciate, and become more sensitive to intercultural differences overall.

Although this study documented the effects of intercultural experiences on levels of development of intercultural sensitivity among college students, further research is needed to determine causal variables related to students' ability to increase their intercultural sensitivity. Specifically, future studies should examine which activities institutions should adopt to support and increase students' intercultural sensitivity. Research is inconclusive regarding the length of time abroad required to increase levels of intercultural sensitivity.

Finally, to potentially achieve intercultural competence requires a comprehensive analysis of the factors that influence intercultural sensitivity such as demographic, language, and cultural differences. Once identified, intercultural training should occur. The objective of intercultural training should be to develop intercultural sensitivity in professionals so that they can operate effectively in intercultural environments and become interculturally competent (Altshuler et al., 2003; Anderson, 2004; Bhawuk & Brislin, 1992; Chen, 2008; Gacel-Avila, 2005; Hammer et al., 2003; Straffon, 2003).

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