DEVELOPMENT OF INTERCULTURAL COMPETENCE THROUGH SHORT-TERM STUDY ABROAD PROGRAMMING

by

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This is in dedication to those who take leaps, opening themselves up to change and new learning experiences.

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ABSTRACT

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Agriculturalists, educators, students, and professionals alike, function in a global industry. In order to work effectively and efficiently to meet industry goals and address challenges, possession of a specific skillset is necessary. This skillset includes the skill of intercultural competence. The objective of Chapter 2 was to assess students' intercultural competence development following participation in an embedded study abroad program. This program included students studying food security and environmental challenges who were also engaged in intercultural learning activities before, during, and after a 9-day trip through Vietnam. Results showed an average increase in students' Developmental Orientation (DO) on the Intercultural Development Continuum (IDC) of 13.68 points through their participation in the course ($p < .05$). This positive growth indicates that on average, student participants increased their intercultural competence throughout the semester program.

Chapter 3 describes results of a study conducted using the same group of participants of the embedded study abroad program to Vietnam. The objective of this study was to assess the beliefs, events, and values of student participants at the beginning of the semester and following completion of the semester course using the Beliefs, Events, and Values Inventory (BEVI). Additionally, it was an objective to explore any changes that occurred throughout the duration of the 16-week course. Results from this study revealed little progression on scales related to course outcomes, unintended meaningful changes in scales unrelated to course outcomes, and variations

between subgroups (gender and ethnic). These data suggest that the curriculum as delivered requires revision in order to support individual student needs and further development of formative assessment emphasizing emotional and attitudinal dimensions, in addition to discipline content, of student experiences during a study abroad program.

Chapter 4 describes the intercultural competence development of the Cooperative Extension Educators who served as mentors to the undergraduate participants in the embedded study abroad program to Vietnam discussed in Chapters 2 and 3. Results from this study indicated that there was an overall decrease in Extension Educators' DO of 8.0 points. Though this decrease was evident, only 2 of the 5 Educators decreased meaningfully on the IDC according to IDI instrumentation. Further analysis of quantitative and qualitative data revealed professional development benefits, such as developing new perspectives and connecting with undergraduate students, of the student-mentor relationship for the Educators.

Chapter 5 describes results from a study conducted in a combined learning community/short-term study abroad program restricted to incoming and current first-year students studying food production in Italy. The objective was to assess student intercultural competence development pre- and post-participation in the program that had incorporated intercultural learning activities both during and throughout the course following the study abroad. Results revealed that 42% of students advanced on the IDC and 26% progressed into a new stage on the IDC. Overall group growth was not statistically significant at a gain of 4.1 points on the IDC. This indicates that participating in the program did not significantly increase students' intercultural competence.

Data in this thesis support that intercultural competence has the potential to be developed in short-term study abroad programs with the implementation of intercultural intervention.

However, literature indicates that destination, duration, stage of development, and incoming participant worldviews influence outcomes in the development of intercultural competence. Emphasis on participant stage development on the IDC and preparedness for meeting course learning outcomes should be taken into consideration by study abroad leaders when constructing program design.

CHAPTER 1.   LITERATURE REVIEW

1.1   Introduction

Students and educators live and work in a dynamic environment full of questions requiring answers and challenges lacking resolutions. Each response to questions and challenges varies based on the cultural context from which they are being considered. These inquiries impact people broadly, especially from a land-grant university perspective, where engagement with communities outside of the university is among the three main missions of teaching, learning, and Extension. With both local and global audiences and influence, it is critical for both students and educators of agriculture to develop and utilize intercultural competence skills. The research described here examines intercultural development among agricultural study abroad participants both to analyze changes in congruence with intercultural interventions and to procure initial data in order to analyze larger sample sizes in future studies to inform best practices in short-term study abroad programming.

1.2   Preparing Agricultural Students for a Global Workforce

The ability to communicate efficiently and effectively cross-culturally is increasingly important with the demand for solutions to global challenges (National Research Council (U.S.), 2009). The world population has increased tremendously in the last century and is expected to reach upwards of 9 billion people by 2050 (Roser and Ortiz-Ospina, 2018). Producing enough high-quality and safe food for the growing population, and doing so in an environmentally sustainable manner is a current and growing challenge for modern agriculture (Amundson et. al., 2015). This challenge is cross-cultural, spanning beyond U.S. borders, transcending cultural barriers, and influencing agricultural practices and education broadly.

Globalization can be described as the transfer of "goods, services, people, and ideas across national borders" (Merriam and Bierema, 2014). Globalization is changing how societies address issues such as food security and increased populations have increased food demands. In turn, there are growing employment opportunities in the areas of food, agriculture, and natural resources, to address such needs, but a lack of graduates to fill them in many cases (Goecker et al., 2015). As both globalization and populations increase, challenges in food security will grow, and designing and implementing long-term solutions will require cross-cultural collaboration.

In addition to overall population growth and demographic changes within populations also highlight a need for intercultural competence in the U.S. workforce, including those working in agriculture. The United States population is aging and increasing in ethnic diversity (Mather, 2016). These changes are evident in the student population, which has, in turn, led to changes in higher education and agricultural education (National Research Council (U.S.), 2009; Hainline et al., 2010). Educational needs of students from across differing backgrounds, including differences in ethnicity, generations, social roles outside that of student (i.e. parent, part-time or full-time worker), and gender (roles and identities), vary and must be addressed using distinctive strategies. Student populations in animal science academic disciplines are becoming more female-dominated and increasingly urban; requiring a shift from historical approaches of teaching in agriculture (Buchanan, 2008). The land-grant institution was created primarily for agriculture, mostly family farming, and the mechanical arts (National Research Council, 1995). Educational changes, including increased urban agricultural and food manufacturing topics in addition to providing course content that reflects student experiences, increase the need for intercultural skill development of all faculty, staff, and students within Colleges of Agriculture.

In addition, in the early 1900s, agriculture employed nearly half of the United States population while today, less than two percent of the population is directly involved in production agriculture (Dimitri et al., 2005; National Research Council (U.S.), 2009). More students are coming into agricultural programs with little to no production agriculture background and more agricultural jobs are developing off the farm (Buchanan, 2008; Leer, 2012; Bobeck et al., 2014; Sterle and Tyler, 2016). Agricultural students need to be prepared to fill roles that require them to work in different facets of the industry and with people whose backgrounds differs from their own.

Globally, the agricultural industry continues to evolve in congruence with societal changes, including increased food production and employment variation; our education must also evolve to keep pace. Agriculture affects populations both locally and globally, and at a land-grant university, populations are reached through their three missions of teaching, research, and Extension. With varying audiences and influence, it is critical for both students and educators to develop and utilize skills that will guide them in a globalized environment. Various strategies have emerged to address the need for student guidance in intercultural learning. Cultural understanding requirements within university programs are one such strategy (Lambert Snodgrass et al., 2018) as well as restructuring courses to include global perspectives to increase student global awareness (Foskett and Maringe, 2010). Building relationships between universities, both domestically and internationally, and deploying teaching development programs in order to equip a new generation of global-minded and more diverse educators are also strategies used in order to adjust in response to globalization on campuses (Popescu, 2015). In addition, service learning, cultural immersion, and exchange programs are employed on campuses to broaden students' global capacity (Vande Berg et al., 2012; Reade, 2013; Senyshyn,

2018). Study abroad is a commonly utilized immersion experience aimed at providing students the opportunity to develop and hone these skills defined as intercultural competence.

1.3   Intercultural Competence

1.3.1   What is intercultural competence?

Deardorff et al. (2004) defines intercultural competence as communication and behaviors in intercultural context, and the ability to apply those across cross-cultural contexts. The definition of intercultural competence, as understood both by administrators and scholars, has also been thoroughly evaluated (Deardorff, 2006). Definitions between both groups identified common themes, including awareness, valuing and understanding of cultural differences, experiencing other cultures, and cultural self-awareness (Deardorff, 2006). Cross-cultural describes the interaction between two or more cultures. In contrast, Bennett (2012b) refers to intercultural as being specific boundaries between people where cultural difference controls the interpretations made by involved parties. He continues to explain that the term intercultural can also encapsulate the necessary skills needed to appropriately engage in cross-cultural exchanges. A more comprehensive definition describes intercultural competence as the capability to navigate differences in culture and properly utilize successful communication skills that accept the multidimensional identities of individuals in their environment (Chen and Starosta, 1996). For the purpose of this thesis, we will identify with Chen and Starosta's definition.

In order to develop knowledge, skills, and attitudes within cultural context, engaging in intercultural learning is beneficial. Intercultural learning is defined as acquiring intercultural competence (Bennett, 2010), and these developed skills must be transferable cross-culturally (Bennett, 2012a). Utilizing the Intercultural Knowledge and Competence Rubric of the Association of American Colleges and Universities (AACU, 2018) as a guide, the knowledge,

skills, and attitudes associated with intercultural competence can be defined and evaluated. Two areas of growth comprise the knowledge category: 1) cultural self-awareness; and 2) knowledge of worldview frameworks. Within skills there are three evaluated competencies: 1) empathy; 2) verbal communication; and 3) nonverbal communication. Lastly, the attitudes needing development for intercultural competence are: 1) curiosity; and 2) openness. Outlined below are the definitions of each knowledge, skill, and attitude according to AACU (2018):

- Cultural self-awareness implies that an individual can gather understanding and communicate their own biases and cultural rules as well as how those biases and guidelines have shaped their experiences.

- Development of knowledge of cultural worldview frameworks means that an individual can display an understanding of different cultural components and the complex interactions between members of cultural groups other than their own.

- Empathy suggests that one can shift their perspective in order to understand the views of others in a compassionate way that appreciates the viewpoint of a different cultural group.

- The development of verbal and nonverbal communication skills in reference to intercultural communication are displayed as an appropriate exchange and understanding with others who are culturally different.

- Engaging in complex discussions about other cultures and pursuing an understanding of perspectives from different cultures demonstrate developed curiosity.

- Openness refers to the initiation of interacting with people who are different by refraining from judging the other.

To understand the process of development of intercultural competence, one must first understand a well-designed, recognized, and validated model. Milton Bennett (1986) was first credited for the Developmental Model of Intercultural Sensitivity (DMIS), which is used in the guidance of intercultural training and assessment of intercultural competence (Bennett, 2014). The Intercultural Development Continuum (IDC), evolved from Bennett's (1986) DMIS, identifies and looks holistically at the multitude of ways in which people experience cultural differences (Hammer, 2015). The Intercultural Development Inventory (IDI) is a tool that quantifies individual or group cultural competence. The IDC, in turn, provides a lens from which to view and understand the results provided by the IDI by placing individuals or groups at different and progressive levels of intercultural competence. The IDC is composed of five stages, two in the monocultural, or ethnocentric, mindsets (denial and polarization), one transitional orientation between mindsets (minimization), and two intercultural, or ethnorelative, mindsets (acceptance and adaptation) (Hammer, 2012). Ethnocentric is identified as using one's own culture as a dominant reality from which to make sense of other cultures and ethnorelative is identified as using one's own culture as interpreted from the framework of other cultures (Hammer et al., 2003). This model is utilized in intercultural development trainings across universities, corporations, and various organizations worldwide (IDI LLC, 2018). The IDI can be a valuable assessment at an educational level as a tool to evaluate students' stages of development in intercultural sensitivity.

Each stage along the IDC (Figure 1.1) refers to a set of views from which an individual perceives and understands cultural difference. These stages also describe behaviors one may elicit when faced with differences in culture. All definitions are retrieved from Bennett (2014).

- <u>Denial</u> refers to a state in which an individual does not recognize or acknowledge difference. In this stage of development, people may be unwilling to involve themselves at all in intercultural communication or may even be openly opposed to interaction.

- <u>Polarization</u> encompasses both defense and reversal. Defense refers to the polarization of differing cultures. This is an "us" versus "them" perception, where the individual is highly critical of other cultures. Reversal is when the individual is overly critical of the culture from which they identify while romanticizing another.

- <u>Minimization</u> is identified as the stage at which individuals feel that their cultural perspective applies to cultures worldwide. Individuals in this stage of development use similarities across cultural views to obscure differences. This stage makes dangerous assumptions by treating others equally, while the individual being assessed' cultural perspective may differ widely on how the person with which they are interacting appreciate being treated.

- <u>Acceptance</u> does not necessarily equate to agreement, but is more a state of curiosity and respect of cultures different than their own. Acceptance differs from minimization by acknowledging that the cultural differences are significant in the foundation of human identity.

- <u>Adaptation</u> refers to the ability to adapt one's behavior to mirror that of the cultural context in which one is interacting. In this stage, a person can shift their lens to understand others according to the culture in which they're interacting.

Intercultural skills are not the result of a single experience, but a complex process (Stier, 2006). Developing intercultural competence requires deliberate pedagogical tools (Vande Berg et al., 2012). In a process, there is no progression without transitioning through each stage; each

stage requires different developmental stimulation to move along the continuum (Stuart, 2012). It is unlikely and unrealistic to expect someone in the denial stage to move directly to minimization or that a person in minimization will move directly to adaptation without some sort of stimuli or learning experience. This is a fluid process and individuals can move both forward and backward between stages (Acheson and Schneider-Bean, 2019).
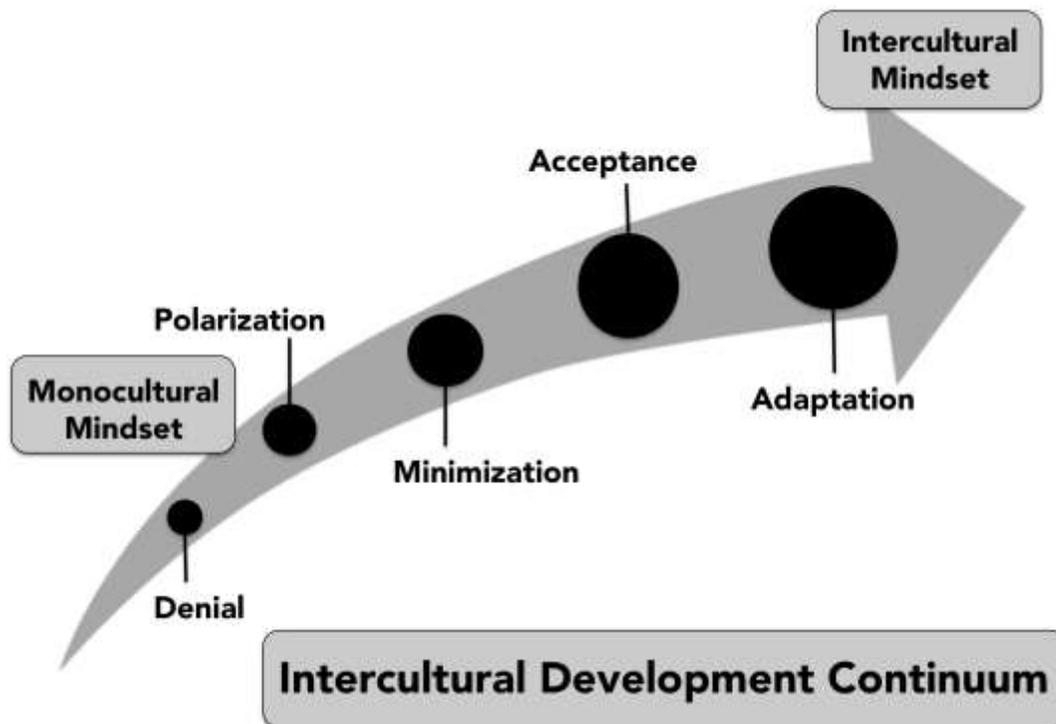
Figure 1.1. *The Intercultural Development Continuum (IDC) Adapted from IDI LLC (2019)*

1.3.2   Why is intercultural education important in agriculture?

With the continuous increase of diversity in the U.S. workforce and education systems, including the agricultural sector, the American Association for Agricultural Education (AAAE) National Research Agenda 2016-2020 identified the need to recognize effective strategies to recruit diverse populations into agriculture and natural resources careers (Roberts et al., 2016). Efforts should not only attract diverse populations to agricultural career paths, but also ensure diverse populations thrive in these trajectories. When educators provide an engaging

environment that utilizes and promotes cultural competencies, students whose background differs from the majority of their peers feel more like they belong, which can in turn impact retention (Ramos and Taylor, 2017). Ramos and Taylor (2017) also report that when cultural competency and multiculturalism are integrated into course materials, students are encouraged to evaluate their values and beliefs, which is critical to experience in a dynamic environment enriched with diversity.

Students and educators must not only be culturally aware and sensitive of their peers through the utilization of intercultural competence, but also in addressing diverse communities about different facets of agriculture. This is evident as the AAAE National Research Agenda 2016-2020 also highlighted the need to identify methods, models, and programs that are effective in communicating with diverse audiences (Roberts et al., 2016). These are priorities for higher education because there has been a lack of success in providing an inclusive environment for people from all backgrounds to thrive in the agricultural field. Developing intercultural competence is a place to begin.

Intercultural competence does not only play a role in international, but also domestic contexts (Hammer et al., 2003). Increased rates of diversification have shifted student demographics over the last two decades, and many states across the U.S. will experience continuous rise through 2025, challenging education systems to become more inclusive and representative of the U.S. population (Bransberger, 2017). It is the responsibility of education systems to prepare students to successfully navigate their diverse classrooms and apply those same competencies in the workforce.

Thus, the motivations for and implications of intercultural competence in the agriculture industry are multifaceted. Global communication and interaction have increased due to

technological advances. Communication effectiveness must transcend more than one cultural perspective when engaging in these various cross-cultural interactions and multicultural environments. Furthermore, companies expect graduating university students to have developed these intercultural competence skills in order to succeed in diverse organizations (Schramm and Mulvey, 2016).

The top five attributes that employers seek in recent graduates as reported from the National Association of Colleges and Employers (NACE) national survey are: problem-solving skills, ability to work in a team, communication skills, leadership, and strong work ethic (Gray and Koncz, 2017). The top four of these five attributes require some level of competence on an intercultural level as required by the increasing diversification of the 21st century workplace and college campuses. Support from empirical research indicates that the possession of intercultural competence is invaluable beneficial in business and job performance, cross-cultural communication, academic adjustments and international relationships (IDI LLC, 2019). When diversity is embraced, there is increased workplace productivity and competitive advantage (Green et al., 2002). When leading, communicating, problem solving, and team building in the 21st century workplace, it is impossible to not intersect with someone who identifies with cultures other than that of their own, making these not just valued skills but necessary skills.

1.3.3   Intercultural Teaching Methods

With evolving educational systems and student population demographics and skillsets within those systems, methods in the classroom are advancing. Previously discussed, intercultural competence skills are imperative to success in providing an engaging and inclusive environment for students and educators from all backgrounds. There is no single way to accomplish intercultural competence development in the classroom. Twelve of the most

commonly used cross-cultural training methods include lectures, books, films, case studies, area briefings, films, classroom language training, culture assimilators, sensitivity training, interactive language training, role-plays, field trips, and simulations; the more experiential training methods tend to be the most effective (Lenartowicz et al., 2014). These tactics can be adapted to the needs of the classroom, program, and learning outcomes desired.

Role-playing such as the Alpha-Beta activity used in the program described here, is one example of an intercultural learning tool (Stringer and Cassidy, 2009). Additionally, there are a multitude of opportunities to use 51 other activities from Stringer and Cassidy's (2009) *52 Activities for Improving Cross-Cultural Communication.* Examples include an activity called "Switching Directions: Direct/Indirect" used to teach about differing communication styles across cultures and "Second Language Walk-in-Their-Shoes" to teach empathy to single language speakers for those communicating in nonprimary languages (Stringer and Cassiday, 2009). Field trips, one of the 12 methods in the aforementioned cross-cultural training methods, used throughout these studies include, but are not limited to visits to different ethnic markets, cultural dinners, and the study abroad components of courses. However, experience alone (i.e. simply visiting an ethnic market or foreign country) does not result in intercultural competence; reflection is a critical component to make sense of these experiences (Passarelli and Kolb, 2012). Developing intercultural competence requires a lot of effort, and without specific tools coupled with reflection, experiences like study abroad are not leveraged to develop these skills (Cecil, 2017).

Complementary to study abroad programming and cultural immersion are pre- and post-courses designed to support intercultural competence development (Bathurst and Brack, 2012). Preparing students to encounter difference and debriefing in a safe space (i.e. an environment

that allows for difficult discussions regarding contrasting beliefs and values, where respect is required from all participants) following these encounters is critical. It is during this time that reflection can take place (Passarelli and Kolb, 2012). Proper processing and application of lessons learned through the various teaching methods described above are advantageous in the development process (Vande Berg et al., 2012).

Using different theoretical frameworks and cognitive and fact-based approaches, these cultural learning methods have evolved and can be further adapted for use in various contexts (Lenartowicz et al., 2014). Through application of differing techniques and analyses to assess intercultural learning outcomes, effective methods can be honed for best practices. Results of the studies carried out in this thesis, which incorporate a combination of intercultural learning methods, will inform curriculum design for future programs.

1.3.4 Intercultural Competence Measurement and Analyses

In order to place an individual along the IDC, the IDI assessment identifies the orientations discussed above in 1.3.1 (Denial, Polarization, Minimization, Acceptance, and Adaptation). Based on Bennett's theoretical framework and Hammer's reconfiguration to create the developmental paradigm from which he places people on the Intercultural Development Continuum (IDC), the IDI was developed to measure intercultural sensitivities and competence. The IDI is a 50-item questionnaire that can be accessed online (IDI, 2018). Included are questions to help "describe one's experiences in terms of (a) their cross-cultural goals, (b) the challenges that they face navigating cultural differences, (c) critical (intercultural) incidents that they face when they encounter cultural differences, and (d) the ways they navigate those cultural differences" (IDI, 2018). The survey positions the individual based on their numerical outcome on the IDC (Hammer et al., 2003). We chose to use the IDI because of its validity and reliability

in intercultural research (Hammer et al., 2003; Michael Paige et al., 2003). This tool can be used to measure pre- and post-program developmental stages in order to assess intercultural learning intervention and program effectiveness (Vande Berg et al., 2012).

Another tool used in the analysis of individual and group experience with culture is the Beliefs, Events, and Values Inventory (BEVI) (Roy et al., 2014). This tool aids users in better understanding better their own, others, and worldwide beliefs and values, and to encourage reflection of the implications on learning, relationships, and goals these beliefs and values may have (Shealy, 2018). The BEVI has been continuously developed since the nineties, supported both by theoretical and empirical research studies (Shealy, 2018). Like the IDI, the BEVI is an online accessible survey that can be administered to provide participants with an extensive report displaying not only their results but also detailed explanations or interpretations of the data. We chose the BEVI assessment for its extensive breadth of analysis, using 17 scales, to measure elements attributed to beliefs, events, and values (i.e. sociocultural openness, emotional attunement, global resonance, self-awareness, etc.) and is used broadly on a national level in both academic and industry training (Shealy, 2005).

We chose these two tools because of their different frameworks from which the tools approach and interpret cultural learning of self. Both are used in congruence with intercultural learning and assessing learning outcomes in study abroad programs (West, 2015). Both have been validated through rigorous external and internal validity measures (Hammer et al., 2003; Wandschneider et al., 2015). The IDI has been applied in over sixty published research studies and just as many dissertations (IDI LLC, 2019). The BEVI has also been tested for validity and has proven to be an effective tool for assessing values and beliefs systems broadly through research (Shealy, 2018). While the IDI gives an explicit view of the individual's perceptions of

their skills (PO) in terms of intercultural competence versus where others perceive them to be (DO), the BEVI gives a detailed outline of the individual's history and experience (as outlined in the scales the BEVI measures) that may explain the "why" behind where individuals are within the intercultural development process. Where IDI strictly looks at intercultural competence from objective and subjective views on how individuals navigate cultural difference, the BEVI more holistically looks at personal experiences that have determined the values and beliefs of the individual and how those may influence their perception of different experiences, for example, on a study abroad trip.

The IDI is a five-dimensional questionnaire. Items, or statements on the assessment, correlate each dimension. The dimensions include 1) Denial/Defense with 14 items, 2) Reversal with 9 items, 3) Minimization with 10 items, 4) Acceptance/Adaptation with 14 items, 5) Encapsulated Marginality with 5 items (Hammer et. al., 2003). Examples of each dimension include (Hammer et. al., 2003):

- Denial/Defense: "(1) It is appropriate that people do not care what happens outside their country, (2) People should avoid individuals from other cultures who behave differently, and (3) Our culture's way of life should be a model for the rest of the world."

- Reversal: "(2) People from our culture are lazier than people from other cultures, (3) Family values are stronger in other cultures than in our culture."

- Minimization: "(1) Our common humanity deserves more attention than culture difference, (2) Cultural differences are less important than the fact that people have the same needs, interests and goals in life."

- Acceptance/Adaptation: "(1) I have observed many instances of misunderstanding due to cultural differences in gesturing or eye contact, (2) I evaluate situations in my own culture based on my experiences and knowledge of other culture."

- Encapsulate Marginality: "(1) I feel rootless because I do not think I have a cultural identification, (2) I do not identify with any culture, but with what I have inside."

After completion of the assessment, individuals are provided a score, resulting from the dimensional outputs, and that score matches an IDI stage: 55-70 (Denial), 70-85 (Polarization), 85-115 (Minimization), 115-130 (Acceptance), and 130-145 (Adaptation). The numerical measures provided in IDI outputs include scores for Perceived Orientations (PO: subjective view of the stage from which the individual believes they operate on the IDC), Developmental Orientations (DO: objective view of the stage from which the individual operates), and Orientation Gaps (OG: the difference between the PO and DO).

1.4   Short-Term Study Abroad Programming

There have been major paradigm changes over the 100 years of study abroad programming (Vande Berg et al., 2012). From these changes, it is determined that study abroad primarily falls within the constructivist and experiential paradigms today where historically they've followed positivist and relativist paradigms (Vande Berg et al., 2012). Participation in study abroad programs increased in response to the Cold War years in order to increase student life experience and has continued to increase since (Moncure and Francis, 2011). Supporters of study abroad believed that real world experience and understanding of cultural difference through study abroad opportunities was a way to promote world peace (Moncure and Francis, 2011). During the 1950s, organizations were formed to sponsor thousands of students to travel

overseas (Lee, 2012). Since then, study abroad has become an even more popular means to engage students in off-campus, hands-on learning. The total number of students participating in study abroad has increased by over 45% in the last decade alone, with five times more undergraduate students studying abroad compared to 25 years ago (Vande Berg et al., 2012; Institute of International Education, 2017). Approximately, 1.6 percent of all enrolled university students participated in a study abroad experience during the 2015-2016 school year (NAFSA, 2017).

Goals of studying abroad, as interpreted from its origination and increasing number of participants, often include gaining worldview perspectives, developing intercultural competence, and obtaining international experience. Academically, it is argued that study abroad provides students with opportunities to gain skills, such as intercultural competence development, through experiences that are unavailable locally (Klute et al., 2012). These educational goals are essential in the 21st century work place as a 2014 study found that almost 40 percent of missed opportunities for international commerce was due to a lack of globally competent employees (NAFSA, 2017). With increasing numbers of U.S. consumers and producers, or businesses, interacting across borders, ignoring the need for experience and education in this context is a mistake (NAFSA, 2017). Many programs claim that exposure to different cultures aids in development of intercultural competence, therefore creating globally aware citizens (Vande Berg et al., 2012; Bennett, 2012b). However, research shows that travel and experience with other cultures is not equivalent to intercultural learning or development of intercultural sensitivities (Vande Berg et al., 2012).

The percentage of students studying abroad in agriculture-related fields has nearly doubled in the last decade (Institute of International Education, 2017). As this number rises,

there should theoretically be a rise in intercultural competent graduates heading into the workforce, but this is not necessarily the case. As discussed previously, travel experience does not equate to intercultural competence; experience does not always equal learning (Dewey, 1933; Kolb, 1984). To develop attitudes, knowledge, and skills, there often must be intentional methodologies in place. Deliberate curriculum design coupled with outcome assessment may address the shortage of interculturally competent graduates.

Furthermore, short-term study abroad programs have made the prospect of travelling overseas more appealing (Wikowsky and Mendez, 2018). The majority of students participating in study abroad (63%) do so through short-term programs (Farrugia et al., 2017). Purdue University has seen more than an 80% increase within the past five years, predominately in short-term, faculty-led programs aligned with different academic departments (Yngve, 2019). This growth in education abroad has prompted educators and practitioners to inquire about overall study abroad goals, intentions, and outcomes (Vande Berg et al., 2012).

Short-term study abroad programs have been shown to produce intercultural competence development among student participants (Czerwionka et al., 2015). However, this is not simply a result of participation; study abroad programs that did not incorporate intercultural learning methods or provide the appropriate type and implementation of developmental support saw no progress in intercultural competence in participating students (Anderson et al., 2006; Fabregas-Janeiro et al., 2011; Karcher et al., 2013). Using pre- and post-courses that deliberately implement activities to enhance intercultural competence, such as communication strategies, comparisons between host and domestic cultures, one study showed an average DO gain of 8.62 points on the IDI in participating students (He et al., 2017). IDI (2018) recognizes any progress of 7 or more points as meaningful; a change at this level is indicative of a mindset shift.

Additionally, long-term study abroad programs with no deliberate inclusion of intercultural learning methods produce little to no progress in intercultural competence (Jackson, 2015). Therefore, Dewey (1933) and Kolb's (1984) deduction that we learn from the preparation in advance of and processing that follows experience, not the experience itself, holds true.

1.5   Integrating Cooperative Extension Educators in Student Study Abroad Programs

Effective educators must be able to connect with diverse populations by utilizing intercultural competence skills. These skills are not always innate and often must be developed through intentional educative methods and practice (Lockett et al., 2014). In the last century, there has been a drastic shift in United States population demographics, not only in ethnic backgrounds, but also from predominantly rural to urban living. U.S. Farm and rural populations have decreased (Dimitri et al., 2005). As the world continues to globalize and diversify, it is important that educators maintain the ability to aid in providing solutions to challenges their communities face. The use of intercultural competence is required when working from an international level, but with the domestic demographics continuously diversifying, it has become more urgent for local representatives to possess those skills as well. One way to encourage this development includes integrating the Extension mission of the land-grant into university affiliated study abroad opportunities (Lockett et. al., 2014).

The Cooperative Extension System (CES) was created in 1914 with the passing of the Smith Lever Act as a means for institutional research to reach the public (NIFA, 2018). The primary role of Extension was to address agricultural related matters within rural communities (NIFA, 2018). However, as mentioned above, over a hundred years ago, the demographics of the population were vastly different. CES plays a significant part in livelihoods throughout the country because its role not only involves farming and production, but also all consumers in

society (NIFA, 2018). Although traditionally Extension Educators traditionally have updated farmers with new methods for producing most efficiently, nutrition and community economic development, and youth development, they have continued to become more significant through community-focused programs. As resources to the community, the need for Extension to reach all demographics within the population with information regarding environment, health and well-being, and up-to-date producer and consumer practices from a holistic viewpoint is evident (Ludwig, 2002).

Selby et al. (2005) explores interests of Extension Educators in intercultural learning, experiences with intercultural learning, and barriers prohibiting Extension Educators from engaging in intercultural learning. Although there has been research in regards to Extension affiliates experiences traveling internationally, little research has been done with the incorporation of Extension personnel in university study abroad programs. The Educators hands-on experiences of working with students traveling while also guiding student project development are unique (Karcher et al., 2013). Mentorship and participation in a university led study abroad could very well address the development of intercultural competence Educators should possess in their public roles.

Intercultural learning and development in Extension work and in the agricultural workforce is important. Land-grant institutions such as the model used in this study have grown significantly in numbers of international and underrepresented minority students (Purdue University Division of Diversity and Inclusion, 2017). Not only does Extension need to address this need for communicating to the public, but also to communicate with students in the pool from which most future educators are recruited. Relationships with those affiliated with Extension were key factors in influencing students to pursue a career as an Extension Educator

(Arnold and Place, 2010). This highlights the criticality of developing relationships cross-culturally. These international experiences can empower educators to make informed local decisions through a global lens while developing relationships alongside students who may one day fill their shoes (Treadwell et al., 2013).

1.6   Conclusions

Agricultural students, educators, and professionals alike must possess intercultural competence to meet the demands of the industry. This thesis assesses two study abroad programs (Food Security and Environmental Challenges in Vietnam and Food Production in Italy) in their ability to facilitate development in intercultural competence. The first program (Vietnam) incorporated Extension Educators as mentors throughout a semester course focused on both agricultural content and culturally related assignments to guide intercultural growth before, during, and after a short-term faculty led study abroad to Vietnam. In the second course (Italy), first-year students travelled to Italy and prior to participating in a semester-long course with an emphasis in career development, community outreach, and intercultural learning. While short-term study abroad programs have the opportunity to increase student intercultural competence, there are few studies measuring the impact of incorporating intentional pedagogies aimed to assist both students and educators in developing intercultural competence. Using the foundation of study abroad and intercultural competence research provided in this literature review, these studies seek to provide empirical evidence to enhance the field of agricultural study abroad and intercultural learning.

1.7   Definitions

- Intercultural Competence: "the ability to negotiate cultural meanings and to execute appropriately effective communication behaviors that recognize the interactants' multiple identities in a specific environment" (Chen and Starosta, 1996).

- Extension: "Extension provides non-formal education and learning activities to people throughout the country – to farmers and other residents of rural communities as well as to people living in urban areas" (NIFA, 2018).

- Study Abroad: "any of a number of arrangements by which Purdue students complete part of their degree program through educational activities outside the United States. Such activities include – but are not limited to – classroom study, research, intern- or externships, and service learning" (Brzezinski, 2015).

- Mentor: "a person who advises, guides, encourages, and inspires another person during an extended period of time" (Vance and Olson, 1998).

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CHAPTER 2. INCREASING STUDENT INTERCULTURAL COMPETENCIES IN AGRICULTURE SHORT-TERM STUDY ABROAD PROGRAMS

A version of this chapter has been submitted for review.

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2.1 Abstract

Undergraduate students in the United States are exposed to more cultural differences than students even a decade ago. While study abroad is a commonly used experiential tool to provide undergraduates with skills needed to communicate across cultures effectively, research highlights the need for intentional pedagogy use in these programs. Here we describe changes in intercultural competence in students as a result of participating in a short-term study abroad to Vietnam. The study abroad experience was embedded into a larger, one-semester course that implemented course assignments and reflections aimed at increasing cultural self-awareness and awareness of others The Intercultural Development Inventory (IDI) was administered to 11 undergraduate students at weeks 1 and 15 of the semester. On average, students increased their Developmental Orientation by 13.68 points on the Intercultural Development Continuum (IDC) and the group progressed from polarization to minimization. The use of intercultural learning activities, study abroad, and critical reflection, has the possibility to increase competence in undergraduate students.

Keywords: Intercultural Competence, IDI, Land Grant, Undergraduates, Study Abroad

2.2 Introduction

The ability to communicate effectively cross-culturally is important with the growing demand for solutions to global challenges, including producing food to feed the growing population. The world population has increased tremendously in the last century. The population is expected to reach upwards of 9 billion people by 2050 (Roser and Ortiz-Ospina, 2018). Growth imposes limitations and consequences that must be addressed including, but not limited to, food security, environmental challenges, and food safety. With population growth comes the agricultural responsibility to provide and efficiently produce food while formulating solutions to the adverse effects increased production imposes on the environment. This is a cross-cultural issue as it spans beyond American borders, transcends cultural barriers, and impacts agriculture broadly.

Globalization is defined as "the movement of goods, services, people, and ideas across national borders" (Merriam and Bierema, 2014). Globalization continues to change how society addresses broad issues such as feeding the world by 2050 (FAO, 2009). Agriculturalists are affected by globalization as much as any other industry (Smith et al., 2010). Current agricultural students are in a setting in which topics including food production, the growing population, and globalization are relevant to their future fields of work. They will be entering the workforce where these concerns will require decisions and solutions from them as future leaders. Intercultural competence development is increasingly important due not only to changes in population size but also to shifts in population demographics. Intercultural competence is defined as an individual's capability to deduce cultural meaning and appropriately respond with their behavior, while simultaneously recognizing the multitude of identities others in their environment possess (Chen and Starosta, 1996).

There is a need for agriculture students and educators in higher education to understand the student population as it has been shaped by the 21st century (Hainline et al., 2010). With the transfer of people across national borders as defined in the term globalization, there is an increase in diversity. Agriculture students in the 21st century must be able to communicate efficiently and effectively with peers and colleagues of all backgrounds. One such way to do this is through the use of study abroad programs.

Since the 1950s, study abroad has evolved from exposure to different cultures, then to immersion within a different culture, and now a combination of immersion and reflection, and continues to become a popular means to engage students in off-campus, hands-on, global learning (Lee, 2012; Vande Berg et al., 2012). The total number of U.S. undergraduate students participating in study abroad has increased by over 45 percent in the last decade alone (Institute of International Education, 2017). There is a collective assumption that study abroad helps to develop the skills students will need to work in a globalized society (Vande Berg and Paige, 2012). While it is believed that study abroad increases intercultural competence, results from studies attempting to quantify such increases are mixed. Anderson et al. (2006) investigated effects of a short-term study abroad through a pilot study that resulted in significant increase in their undergraduate student participants' intercultural sensitivity. The length of student time abroad or number of times is correlated with a higher degree of change in intercultural sensitivity (Behrnd and Porzelt, 2012).

According to Fabregas-Janeiro et al. (2011), there was no statistically significant difference in intercultural sensitivity level between undergraduate students involved in either a faculty-led short-term study abroad, a semester long course focused on analyzing different cultures, or the control group who participated in neither activity. Despite mixed results, it is

evident that travel does not always equate with development of intercultural sensitivity. Positive development in cultural competence occurs when methods such as homestays in different cultural contexts and facilitated discussion with students are utilized (Anderson et al., 2006).

Learning to work in a global society is necessary due to continual globalization and demographic changes in the classroom. Over the past decade, undergraduate and graduate international student enrollment in U.S. universities has grown over 80 percent (Musu-Gillette et al., 2017). Educators need to provide an engaging environment that utilizes and promotes cultural competence. When done effectively, students with backgrounds that differ from the majority feel more like they belong, in turn assisting in the retention of these students (Ramos and Taylor, 2017). When cultural competency and multiculturalism are integrated into course materials, students are encouraged to challenge their perspectives, which is critical to their experience as college students in a dynamic environment enriched with diversity (Ramos and Taylor, 2017). The positive impacts of implementing culturally inclusive pedagogy highlights the need to support students in intercultural development through course materials within their academic environment, including in study abroad programs.

The percentage of students studying abroad for agriculture-related studies has nearly doubled in the last decade (Institute of International Education, 2017). As this number is on the rise, there should theoretically be a rise in interculturally competent graduates heading into the workforce. Travel and exposure do not always equate to intercultural learning (Fabregas-Janeiro et al., 2011). Without providing employers with global-ready graduates possessing these skills, we are contributing to the lack of prepared graduates to fill the growing employment opportunities for agriculturalists (Goecker et al., 2015). With the integration of intentional

intercultural learning, study abroad can be better leveraged to challenge agriculture students' worldviews and, in doing so, better prepare students for their future careers.

2.3   Theoretical Framework

The theoretical framework used in this study is the Intercultural Development Continuum (IDC). The IDC originated from Bennett's (1986) Developmental Model of Intercultural Sensitivity (DMIS), which identifies and views holistically at the multitude of ways in which people experience cultural differences (Hammer, 2015). The Intercultural Development Inventory (IDI) is a measurement tool that quantifies individual or group cultural competence and places them on the IDC. The IDC is composed of five stages, two in the monocultural mindset (denial and polarization), one transitional orientation between mindsets (minimization), and the last two in the intercultural mindset (acceptance and adaptation) (Hammer, 2012). This continuum reflects where students perceive themselves to be on this continuum (PO), where students more objectively operate on the continuum (DO), and overestimation of their own intercultural competence skills (OG, or the difference between PO and DO) (Hammer et al., 2003). The IDC provides a lens from which to view and understand the results provided by the IDI. We want to engage students in study abroad programming with the inclusion of intercultural learning activities throughout a semester long course in order to facilitate advancement on the continuum.

2.4   Purpose and Objectives

The objective of this study is to explore and describe college of agriculture undergraduate students' intercultural competence levels before and after participation in an embedded study abroad program (i.e. a short-term study abroad conducted within a semester-long course). In

order to meet the objectives, two research questions were developed: 1) What were students' intercultural competence levels before and after participating in an animal sciences study abroad program? and 2) To what extent does a student's perception of their personal competency affect their ability to grow that competency (i.e. if the student thinks they are in adaptation (Perceived Orientation) when in reality they fall in minimization (Developmental Orientation))? We hypothesized that students would progress on the IDC, however the larger the orientation gaps would correlate with less movement on the scale.

2.5   Methods

2.5.1   Course Information

The Institutional Review Board approved all methods. An embedded agricultural study abroad program (i.e. a semester long course including a study abroad trip) was developed for use at a land-grant institution. The course explored food security and environmental challenges in Vietnamese agriculture. In order to increase intercultural competence, we implemented intercultural learning methods into the course. Eleven students enrolled in the spring 2018 course for three credits where they met once a week on campus for 50 minutes during the semester. The international component of the course in Vietnam occurred during week seven of the 15-week semester. Students were assigned mentors for the semester, each of which was among the five selected Extension Educators (n=5) served as mentors to the students. The descriptive statistics for the student participants are represented in Table 2.1.

Table 2.1. *Demographics of 11 Student Participants in an Embedded Study Abroad Program to Vietnam.*

Gender	n	%
Male	5	45.4

Table 2.1 Continued

Female	6	54.6
Degrees Sought		
Animal Sciences	8	72.7
Agronomy	2	18.2
Agricultural and Biological Engineering	1	9.1
Year in School		
Freshman	5	45.4
Sophomore	2	18.2
Junior	3	27.3
Senior	1	9.1

The primary role of each Extension Educator was to serve as a U.S. agricultural expert for the undergraduate students enrolled in the course. As a mentor, they guided students on discipline-related assignments. Requirements of the mentor position included: 1) being available for input on student assignments; 2) providing a discipline related presentation on their individual areas of expertise; 3) contributing to semester assignments with an assigned student group; and 4) completing intercultural activities. The Educators were recruited from across the state served by the land-grant university.

2.5.2 Course Assignments

David Kolb's (1984) model of experiential learning has been used to describe study abroad programming (Passarelli and Kolb, 2012). While there are challenges, such as limited time in country, within short-term study abroad programs, designing the course to include aspects of the experiential model such as journaling to reflect, conceptualize, and apply, can

alleviate some of the educational hurdles, including learning from the experience rather than just experiencing (Gibbs, 2015). Experiential learning plays a role in creating well-rounded students for the workforce (Moncure and Francis, 2011).

Experiential methods were utilized to guide the assignments as indicated in the following steps. Course assignments were selected based on their focus on cultural self-awareness and awareness of others (Table 2.2). Thiagi Group (2015) was used to debrief all in-class activities. Students completed written or video reflections following each of the activities and out-of-class assignments. Critical reflection is a key factor in Kolb's experiential learning model (Kolb, 1984; Gibbs, 2015). Along with the cultural activities (Table 2.2), teams worked with their mentor on a semester-long video project where students studied what they perceived were grand challenges facing Vietnamese agriculture.

The Name Game, "Who am I?" Poem, and IDI debrief activities all focused on self-awareness. First, the Name Game requires participants to reflect on their given name, who chose the name, why the name was chosen, and what it means to themselves and to others (Stringer and Cassidy, 2009). This activity is designed for groups in denial, polarization, and minimization. The "Who am I?" Poem required participants to compose a 10-line poem with lines that start with "I am" and represent who they believe they are (e.g. *I am from a small town with not even a stop light, I am from rock and roll music, or I am a sister, daughter, and friend*; Ting-Toomey and Chung, 2013). The poem is designed for groups in all stages on the IDC. The IDI debrief is a one-on-one discussion with a qualified administrator that allows the student to discuss their IDI results and individual development plan.

The Alpha/Beta simulation is an exercise that prompts participants to act using certain characteristics in a negotiation between two businesses (Stringer and Cassidy, 2009). Each

business has specific, different communication styles that make the negotiation challenging. Both groups must reach a consensus on the decision to be made while acting these parts that require them to work together regardless of cultural differences, requiring effective navigation. This activity is used for awareness of others and fits best with large groups primarily in minimization. Reflections require students to reflect on all activities including both self-awareness and awareness of others. The collaborative video blogging (semester-long) project combined both content knowledge (agriculture discipline) and reflection regarding their cultural activities.

Table 2.2. *Intercultural Learning Activities Included in an Embedded Study Abroad Program to Vietnam*

Activity	Activity Focus	Week of Course
Name Game	Self-Awareness	1
Who am I?	Self-Awareness	2
IDI* Debrief	Self-Awareness	4
Alpha/Beta Simulation	Awareness of Others	8
Reflections	Self-Awareness/Awareness of Others	2,3,4,5,6
Collaborative Video Blogging	Self-Awareness/Awareness of Others	5,8,12,15

*IDI: Intercultural Development Inventory (IDI, 2018)

2.5.3 Assessment of Program

Questionnaire Design: The IDI was administered both at weeks 1 and 15 of the semester. The IDI is a 50-item questionnaire that can be accessed online and places individuals on a continuum of intercultural sensitivity (IDI, 2018). Milton Bennett's Developmental Model of Intercultural Sensitivity (DMIS) is commonly used in the guidance of intercultural training and in assessment of intercultural competence (Bennett, 2014). Bennett's model has been adapted by Hammer to create the IDC. There are several levels of intercultural sensitivities that fall along

the IDC. These levels are separated into ethnorelative (an individual understands their culture within the framework of others) and ethnocentric stages (an individual understands their culture as governing their existence) (Hammer et al., 2003). Denial, defense, and minimization fall within the ethnocentric stage while acceptance and adaptation fall within the ethnorelative stage. The numerical measures provided in IDI outputs include Perceived Orientations (PO: personal view of their intercultural competence), Developmental Orientations (DO: an impartial view of individual's intercultural competence), and Orientation Gaps (OG: the difference between the PO and DO).

There are five stages of intercultural development on the IDC, each defined by Bennett (2014). First, there is denial, which is a state in which an individual doesn't recognize or acknowledge difference. Polarization is the second stage in which individuals view cultural differences as "us versus them." Third, there is minimization, which can be identified as a stage in which a person's perception is that their cultural perspective applies to cultures worldwide. These individuals use similarities across cultural views to mask differences. Acceptance, the fourth stage, is characterized by a state of curiosity and respect of different cultures. This stage differs from minimization by acknowledging that cultural differences are important in the foundation of human identity. Lastly, adaptation refers to the ability of adapting one's behavior to match that of the cultural context one is immersed. An individual in this stage can put themselves in the others' shoes according to the culture with which they are interacting.

2.5.4 Statistical Analysis

Paired sample t-tests and Pearson correlations were run through SPSS Statistical Version 25 (IBM Corp) on student IDI results. T-tests were run on the group's pre- and post-perceived orientation (PO), developmental orientations (DO), and orientation gap (OG). Pearson

correlations were run on the group's pre-OG and the change in DO from pre- to post-participation in the course. Effect size was calculated for DO of students to assess pragmatic implications of the program in order to quantify the differences in the pre- and post-group scores. Significant differences declared at $p < .05$.

2.6   Results

2.6.1   Perceived Orientation.

The group's PO increased from pre to post PO (116.64 at week 1 to 122.37 at week 15; Figure 2.1). Both the pre and post PO indicate that the group's subjective view of how they operate when faced with cultural differences was in the acceptance stage of the IDC.
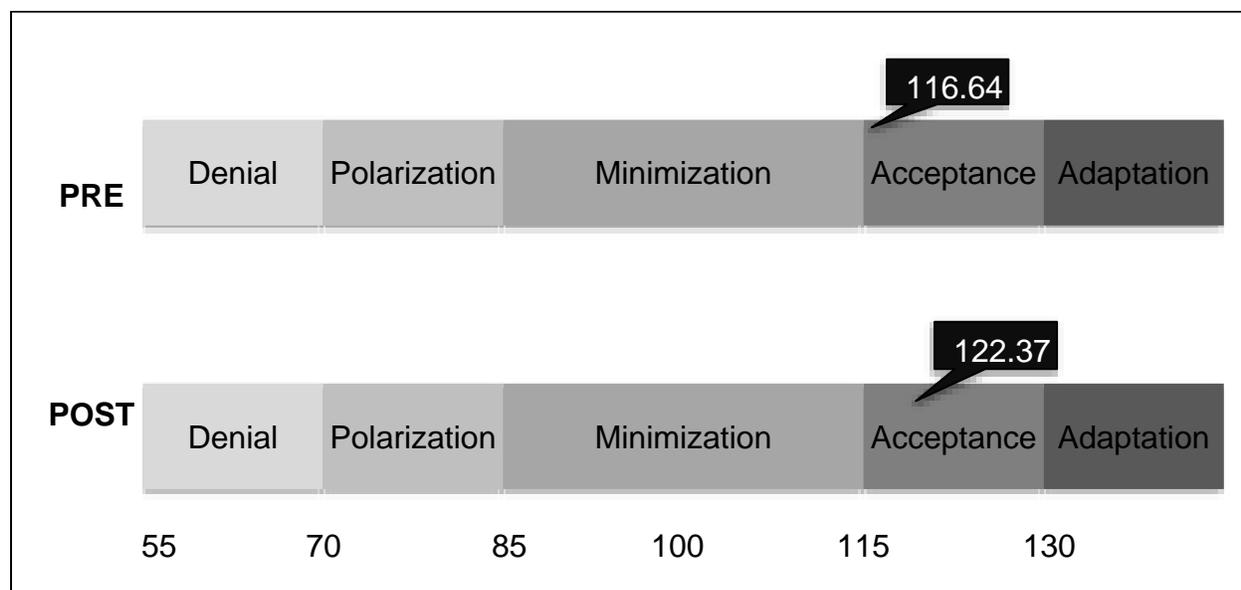
Figure 2.1. *Pre and Post Group Perceived Orientations (PO) (i.e. subjective view of their abilities to navigate cultural difference) of 11 Student Participants in an Embedded Study Abroad Program to Vietnam.*

2.6.2   Developmental Orientation

Students moved as a group from a pre-DO of 80.53 at week 1 to a group post-DO of 94.21 at week 15 (Figure 2). The 13.68 difference was significant ($p < 0.05$; Table 2.3). The group progressed from polarization to minimization on the IDC. The majority of students (63.6%) of students moved into an entirely new stage on the continuum. The Cohen's d calculated for student DO showed moderate effect size at .40.

Table 2.3. *Mean, SD, p-value, and Cohen's d results of Student IDI* Developmental Orientations*

	Mean	N	SD	P	Cohen's d
Pre DO	80.53	11	12.32	.01	.40
Post DO	94.21	11	10.86		

*IDI: Intercultural Development Inventory.
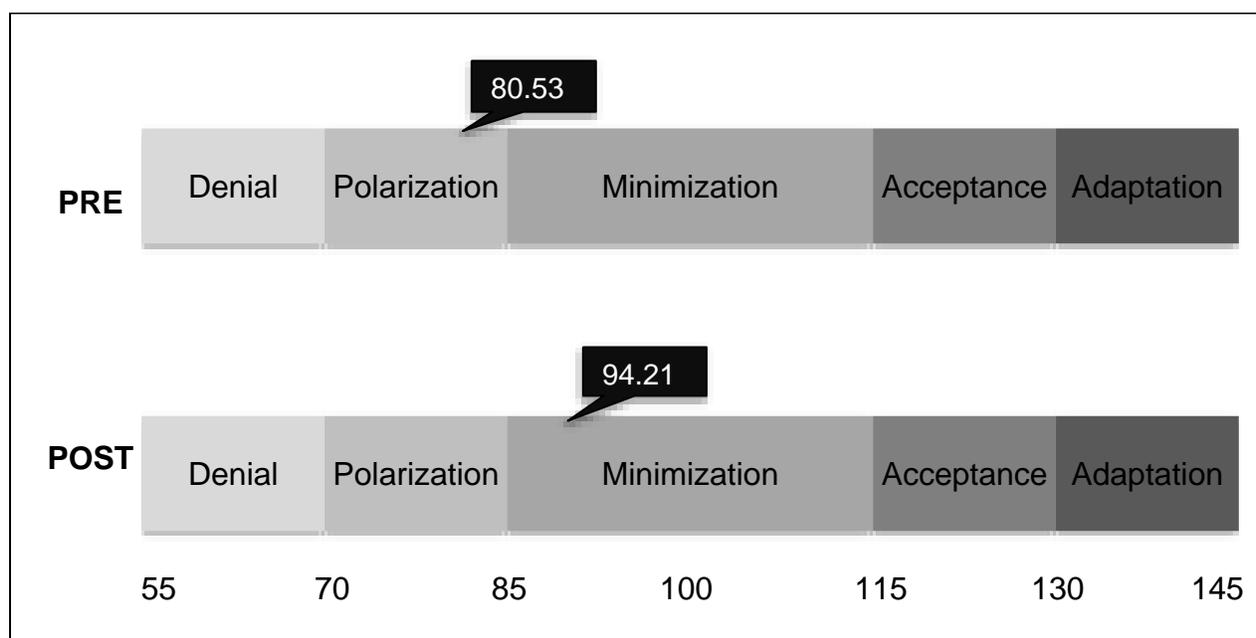
Figure 2.2. *Pre and Post Developmental Orientations (DO) (i.e. objective view of how an individual navigates cultural differences) for a group of students participating in an undergraduate study abroad program.*

2.6.3   Orientation Gap

Individual: The student with the smallest OG was at 16.74. That student regressed on the continuum by over 12 points on their DO. In contrast, 3 out of the 5 highest OGs exhibited were those of the students whose DO increased by over 20 points (29.01, 28.00, and 32.02 points).

Group: The pre OGs for 10 of the 11 students was above 30 points. Hammer (2012) explains that any OG above 7 is a significant overestimation of their objective operational stage. The OG of all except three students, two of which increased by only 1 point, decreased over the course of the semester (i.e. their PO and DO were closer together).

2.6.4   Correlations

Pearson correlations were utilized to determine the extent students' perception of their personal competency affected their ability to develop that competency. Pearson correlations indicate that there is a significant positive correlation between group pre-OG (i.e. the beginning of the semester difference between PO and DO) and the change in pre-DO and post-DO (i.e. change over the course of the semester in developmental orientation) (Table 2.4). The larger orientation gaps were associated with higher change from pre to post development orientation, indicating that the students that originally overestimated their intercultural competence skills the most ended up changing the most throughout the duration of the semester.

Table 2.4. *Pearson Correlation between Group Pre OG and Change in Group DO of 11 Student Participants in an Embedded Study Abroad Program to Vietnam.*

		Pre OG	Change in DO
Pre OG	Pearson Correlation	1	.64*
	Sig. (2-tailed)		.03

*Indicates statistical significance at $p < .05$ (2-tailed).

2.7 Discussion

As a group, the students enrolled in this program increased their intercultural competence throughout the duration of the semester. Although our study did not contain a comparison group, Karcher et al. (2013) conducted a similar study with 9 students that focused on an embedded agricultural study abroad program to Vietnam. The 2013 study did not contain specific assignments intended to facilitate self-awareness nor awareness of others. The group of 9 students did not experience a change in pre and post DO (as measured by the IDI).

Lou and Bosley (2012) discuss the recent Georgetown Consortium study that looked at intercultural competence development across more than sixty studies. Using the IDI to measure, it was discovered that of a group of 1050 undergraduate students involved in various study abroad programs not receiving an intervention of intercultural learning, there was an average group gain less than 1.5 on the continuum. In comparison, students receiving intercultural learning interventions consisting of pre- and post-departure intercultural instruction and support gained 8.1 points on average (Lou and Bosely, 2012). This is consistent with the present study where students received intentionally focused assignments to encourage engagement in cultural learning. Intercultural sensitivity gains of 7 points or more indicate meaningful movement on the IDC (Hammer, 2012). To move within a stage or from one stage to another, it requires an adjustment from the previous mindset (Lou and Bosely, 2012). The current study demonstrated a 13.68 group gain on the IDC and 63.6% of student participants shifted to a new stage on the IDC.

Fabregas-Janeiro et al. (2011) studied three study abroad groups, one semester-long course whose topic was culture, and one comparison group. The participants studied abroad or took a course locally that was focused on culture, but there were no specific intercultural learning interventions across the five groups. Fabregas-Janeiro et al. (2001) found no significant differences among the groups but acknowledge that although the courses are discussing culture,

there may not be the correct focus on how to process cultural differences, such as critical reflection or self-awareness activities. This highlights the need for intentional methods to engage students in intercultural competence development through self-awareness and awareness of others in order to make sense of their experiences.

Our study explored the gap in perception versus stage on the IDC in order to determine if this hinders the group's ability to progress across the continuum. The gap identifies the misconception of how one perceives themselves as behaving in an encounter with cultural difference. We thought it would be more difficult for those with the largest gaps to develop intercultural competence and move along the IDC. Overconfidence in their ability to learn and retain information yielded a lack of continued effort to learn by college students (Dunlosky and Rawson, 2012). This supported the hypothesis that students who overestimated their abilities the most wouldn't progress as much on the continuum compared to students who overestimated themselves less (i.e. lower OG). However, the Pearson correlations indicate that the higher the OG, the higher degree of change in developmental orientation with the students in our study. Exploration of orientation gaps and what they indicate for groups participating in similar studies should be considered in future research. This study consisted of a small sample size and should not be taken as a generalization to the population, but as a finding within these particular participants.

With the increase of diversity in the workforce and education systems, including the agricultural sector, the American Association for Agricultural Education (AAAE) National Research Agenda 2016-2020 identified "strategies [that] are effective in recruiting diverse populations into agriculture and natural resources careers?" as a research priority (Roberts et. al., 2016). Increasing diverse student population's involvement in agricultural career paths and

increasing their retention in agriculture is necessary. Intercultural competence for current agriculture students, therefore, is critical with the increased diversity from continuous globalization. Ethnic diversity is not the only demographic to be considered when assessing educational needs. Increases in diverse, non-traditional student populations including vast age differences, social roles outside that of student (i.e. parent, part-time, or full-time worker), and gender (roles and identities) require higher education to reassess student needs. In order to reach all populations for recruitment and retention, effective cross-cultural communication is essential.

Students and educators must not only be culturally aware and sensitive of their peers through the utilization of intercultural competence, but also in addressing diverse communities about different facets of agriculture. This is clear as the AAAE National Research Agenda also includes "methods, models, and programs effective in communicating with diverse audiences" as a priority research topic (Roberts et. al., 2016). These are priorities because of the struggle to address the need for intercultural competence in order to develop an inclusive environment for people from differing backgrounds. The agricultural education system needs to focus on effective and efficient ways of addressing the priority research topics. Developing intercultural competence is a place to begin.

2.8   Conclusions and Recommendations

In summary, this study combined a semester-long course that incorporated intentional methods used in intercultural development and a short-term agriculture study abroad to Vietnam. Within this study, the group of participants progressed along the IDC. Researchers also found a positive correlation between pre OG and change between pre- and post-DO, indicating that the larger the pre OG, the larger the change in DO from beginning to end of the semester. The more the students overestimated their ability to navigate cultural differences to begin with, the more

they progressed along the continuum. In conclusion, intercultural learning methods, including experiential tools, study abroad, and critical reflection have the possibility to increase intercultural competence, however, our study did not include a control group, indicating a need for further exploration.

Where so many cultures intersect, intercultural sensitivity must be a priority. With global issues including food security and food safety, there must be cross-cultural collaboration. As commonly used as study abroad is in higher education, increasing program support for developing intercultural competence, as this study aimed to do, makes it more likely to reach the goals of learning outcomes aimed at intercultural learning through study abroad programs.

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CHAPTER 3.   USING THE BEVI TO ASSESS INDIVIDUAL EXPERIENCE TO ENHANCE INTERNATIONAL PROGRAMMING

A version of this chapter (will be) submitted for review.

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3.1   Abstract

Success in diverse educational and work environments requires intercultural competence, positive attitudes towards difference, and willingness to interact across cultures. Study abroad participation over the last several decades has increased as universities aim to internationalize, yet we lack clear evidence of study abroad providing students with skills and attitudes programs broadly intend to develop. This case study (n=11) documents the implementation of various intercultural learning activities throughout a semester long course, including a 9-day trip to Vietnam. Researchers anticipated positive development in three areas measured quantitatively by the Beliefs, Events, and Values Inventory (BEVI): critical thinking, openness, and environmental concern. While overall the group scores did not increase on scales related to these three areas, in a more detailed analysis interesting patterns emerged in the data with regard to unintended learning outcomes, such as changes in philosophical versus pragmatic thinking and perception of life events, as well as impact of individual differences in identity and preparedness for learning. The data suggest potential curriculum changes, such as using pre data to facilitate course

discussions, and additional resources to support student needs, including formative assessment involving attitudinal and emotional topics in addition to course content.

Keywords: BEVI, Intercultural Competence, Student Development, Study Abroad, Assessment of Learning Outcomes, Scholarship of Teaching and Learning

3.2   Introduction

In the 21st century, workplace and educational environments have been shaped by demographic, technological, and social changes (Stringfield and Stone, 2017). There is increased diversification; populations are increasing, and lifespans are lengthening. Rapid and continuous globalization prompts collaboration across cultures now more than ever. There are currently five generations that comprise the workforce and women contribute 57% of labor forces, indicating diversity's multiple facets, including by gender and age (USDOL, 2017). These components of the evolving social environment require current graduates to develop skills beyond the technical realm. "Global citizens" is a common phrase used to indicate the type of graduates universities aim to produce. Despite the multitude of definitions explaining the term (Byker and Putman, 2019), Lilley, Barker and Harris (2017) determined that an absolute definition for global citizen is unnecessary because there is consistency between what skills, attitudes, and knowledge are attributed to such individuals. Those common components included openness and tolerance, accountability of oneself, others, and the environment, as well as maintaining respect for differences (Lilley et al., 2017).

Familiar competencies relating to global citizenship are those such as cultural self-awareness, awareness of others, and intercultural communication skills. As universities prepare students for their careers, personal and interpersonal skills as well as global-mindedness are

fundamental. Some higher education institutions, such as two large, public, land-grant universities in the Midwest, have implemented campus-wide learning outcomes of intercultural competence and global consciousness for all undergraduate students (Purdue University Office of the Provost, 2019; University of Illinois Office of the Provost, 2019). However, assessment of learning outcomes is necessary to demonstrate their achievement. Internationalization in higher education is a relatively new field of study, emerging in the 1990s (Bedenlier, Kondakci, and Zawacki-Richter, 2018). Although universities are pursuing global learning in order to infuse global concepts, there needs to be a continued evolvement of the approaches to attain these goals (Kahn and Agnew, 2017).

One way in which universities aim to internationalize is through the use of study abroad programming. Mawer (2017) highlights the increased funding provided for scholarships to promote this type of student international learning. Study abroad opportunities are widely encouraged due to the potential of providing students with engagement in global practices, prompting the development of global competencies (Vande Berg and Paige, 2016; Byker and Putman, 2019). However, development does not simply correspond with experience abroad (Bennett, 2010; Passarelli and Kolb, 2012). This is where assessment and evaluation play an important role. While students are credited with accomplishing major and minor requirements, the more advantageous rewards of study abroad include the development of knowledge, skills, and attitudes around internationalization (Wandschneider et al., 2015).

Much research analyzes development and experience at the cohort level, but assessing individual learners is equally important (Wandschneider et al., 2015). These researchers highlight the importance of understanding who learners are before an experience in order to both evaluate changes over time effectively and tailor curriculum to learner needs. Common

assessment tools to measure the effectiveness of internationalization efforts and students' intercultural competence development include the Intercultural Development Inventory (IDI), Global Perspectives Inventory (GPI), The Global Mindedness Scale (GMS), and Global Competence Aptitude Assessment (GCAA) (Roy, Wandschneider, and Steglitz, 2014). The Beliefs Events and Values Inventory (BEVI) is another empirically validated tool used to evaluate individual changes over time, individual and cohort trends, and event impact on individuals (Roy et al., 2014; BEVI, 2018).

Assessment, both formative and summative, is a critical component of study abroad program evaluation (Roy et al., 2014; Saunders, Hogan, and Olson, 2015). While formative assessments are strategically placed throughout courses to evaluate the variances within student learning and to improve teaching methodologies at periodic time points, summative assessment evaluates the holistic effect on learning outcomes at the end of a program (Dixson and Worrell, 2016). An important formative assessment utilized in study abroad programming is critical reflection (Clarkeburn and Kettula, 2012; Savicki, Brewer, Whalen, and EBSCOhost, 2015). Responses to this type of formative assessment should assist educators in adjusting curriculum as necessary to meet student needs. Without intermittent evaluation that formative assessment provides, there are missed opportunities to adjust throughout programming. Formative and summative assessment should be used in conjunction with one another for complete evaluation in the classroom (Dixson and Worrell, 2016). In this study, the BEVI is utilized for both formative and summative assessment while reflective prompts serve as additional formative assessments throughout the semester.

This study abroad program, while focused on agricultural disciplines within Vietnam, aimed to expose students to agriculture on a global scale and raise awareness to the importance

of intercultural competence development. The BEVI (2018) is a widely used and accepted tool that facilitates growth, addresses organizational needs, and evaluates learning in multicultural programs. This study collected preliminary data using a novel assessment tool and is utilized as a case study to evaluate areas of opportunity in international program development and curriculum design.

3.3   Theoretical Framework

It is clear from the scholarship of teaching and learning that, when it comes to progressing on the intercultural and other types of learning outcomes assessment for participants in a course or other educational intervention, pedagogy and program design matter (Krishnan, Masters, Calahan, and Holgate, 2017). In fact, a team of experts recently outlined 15 implications of a learning outcomes meta-analysis using the Beliefs, Events and Values Inventory (BEVI), arguing that program design and implementation are two of the seven most impactful factors for transformative learning in international education (Wandschneider, et al., 2015).

What does it mean to transform? How can we know that learners are skilled in interacting across cultural differences? To answer these questions, we turn to several relevant theoretical frameworks, including definitions of intercultural competence development, the tradition of Transformative Learning (TL) theory, and the model underlying the BEVI instrument, Equilintegration (EI) theory.

Similar to the term global citizenship, intercultural competence is a construct defined in many different ways in scholarly literature. Yet, there are several themes common to most descriptions of intercultural competence, such as the inclusion of various skills (behavioral domain), knowledge (cognitive domain), and attitudes (affective domain) (Spitzberg and

Changnon, 2009). The Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics created by the American Association of Colleges and Universities (Rhodes and Finley, 2013) provide a way for higher education institutions to standardize learning outcomes. Examples include creativity, critical thinking, quantitative reasoning, and of course intercultural competence. The Intercultural Knowledge and Competence VALUE rubric breaks this complex construct down into 6 components, including two areas of knowledge (self-awareness and worldview frameworks), two skills (empathy and verbal/nonverbal communication skills), and two attitudes (openness and curiosity).

Transformative Learning (TL) theory, originally developed by Mezirow (1978) as an application of Freire's (1970) work with female non-traditional community college students, has recently gained traction as a framework for discourse in U.S. tertiary education. Transformative learning refers to both the processes and outcomes of particular kinds of learning experiences in which the learner's sense of self, of being in the world, and relationships with others are profoundly called into question (Acheson, Dirkx, and Shealy, in press, 2019a). TL theory is especially popular in reference to high impact learning experiences (Kuh, 2008) such as study abroad, international service learning and practice, and living learning communities – that is, programs emphasizing extra-classroom experiences, civic engagement or service learning, mentorship, collaboration, and reflection. However, scholars and practitioners interested in such experiences that seem to have a profound effect on an adult's sense of self and relationships to the broader world are confronted with the problem of assessment. Despite decades of important theoretical work on TL theory and its applications to a myriad contexts (Cranton and Taylor, 2012), the discipline has struggled to operationalize TL theory in such a way that transformative

outcomes can be effectively documented. Recently, both the VALUE rubrics and the BEVI have been used to operationalize TL theory (Acheson, et al., in press, 2019a).

The last theory contributing to the theoretical framework of the current project is Equilintegration (EI) theory. Essentially, EI theory integrates findings from centuries of scholarly literature in various disciplines including psychology, philosophy, and education relevant to the constructs of the self, human needs, and beliefs. In synthesizing these constructs, EI theory seeks to explain the critical relationship between developmental, socio-cultural, and demographic variables and how the systems of beliefs and values that make up the self come to be, explicating "the processes by which beliefs, values, and worldviews are acquired and maintained, why their alteration is typically resisted, and how and under what circumstances their modification occurs" (Shealy, 2004, p. 1075). This theory provides a critical link in understanding learner development because it makes visible the *what* that transforms as a result of educational experiences, that is, the structures of the self that change. Layering EI theory onto Transformative Learning theory is helpful because it highlights the relative preparedness (or lack thereof) of learners for transformation, and thus is able to predict their engagement in processes of transformative learning. EI theory focuses us on human needs, and in doing so enriches our understanding of both how and why transformative learning occurs (or does not occur) (Acheson, et al., in press, 2019b).

3.4   Purpose and Objectives

The purpose of this study is to explore and describe student development in a semester program including an international component. The objectives include assessing student BEVI results at two different time points 1) week 1 of the semester (T1) and 2) after the completion of a semester course, including a 9-day trip to Vietnam, at 15 week (T2), and noting the changes

between the two time points. Exploring changes throughout the semester allows researchers to note areas of strength and weakness in the curriculum design and structure of the program.

3.5   Materials and Methods

3.5.1   Course Design

The Institutional Review Board approved all methods. A semester long course, including a 9-day study abroad to Vietnam, was designed for use at a large Midwestern, land-grant university in the spring of 2018. Eleven students enrolled in the course to study food security and environmental challenges faced by Vietnamese agriculture. The participant makeup includes 45.4% (n=5) male, 54.6% (n=6) female, 45.4% (n=5) first year students, 18.2% (n=2) second year, 27.3% (n=3) third year, and 9.1% (n=1) fourth year. The participants were seeking undergraduate degrees in Animal Sciences (n=8), Agronomy (n=2), and Agricultural and Biological Engineering (n=1). Teaching methodologies aimed to address aspects of intercultural competence were implemented into the course design. Assignments were integrated into course-content lectures held once a week for 50 minutes throughout the 15-week semester. All students were paired with two to three other students and provided an agricultural mentor with whom to design their semester-long project. Mentors were selected out of the pool of Cooperative Extension Educators (n=5) that participated in the program. While students aimed to create a novel solution to a challenge faced by Vietnamese agriculturalists, they were also challenged with reflecting on cultural nuances that may pose limitations or encourage different approaches to their solution.

3.5.2   Program Assessment

The instrument used to assess student development was the Beliefs Events and Values Inventory (BEVI). The BEVI is a psychometric instrument used in analysis of individual and group learning experiences in a variety of contexts including higher education institutions, organizations, and international education (BEVI, 2018). The BEVI is a mixed methods instrument (demographics, 185 quantitative items, and 3 open-ended questions) that is administered online. Outputs from the assessment in the form of an individualized narrative report aim to aid users in better understanding their own and others' beliefs and values, and to encourage reflection on the implications of their value and belief systems for learning, relationships, and life experiences (Shealy, 2016). The BEVI has continuously developed since the nineties, supported both theoretically (relative to Equilintegration Theory) and empirically (Shealy, 2016). The instrument has strong construct validity and reliability as reflected in Cronbach's Alpha calculations ranging by scale from .610 to .903, and adequate model fit as demonstrated through confirmatory factor analysis that yielded CFIs above .9 and p-values of .000 for all 17 scales (Wandschneider, et al., 2015, pp. 159-160).

The BEVI was chosen due to the extensive breadth of analysis. Through a wide range of statistical procedures, it has been found repeatedly that BEVI questions cluster or group into specific factors or scales (BEVI, 2018). The instrument includes 7 domains that holistically measure elements of the structure of the self (i.e. emotional resilience, critical thinking, self-awareness, orientation towards others and the larger world, etc.) (Shealy, 2005). These domains contain clusters of scales, 17 in all (Shealy, 2016). See Table 3.1 for further details about BEVI scales, including explanations of the constructs assessed and sample items. This tool uses a broad, whole person approach, yet also provides a deep dive view into the ways in which individuals' experiences have shaped their beliefs and values and, importantly for this study, the

ways in which individuals' beliefs and values impact learning. This assessment was administered in both week one (pretest, or T1) and week 15 (posttest, or T2) of the semester with 100% response rate (n=11). Students received narrative reports of their individual results by email, and were debriefed as a group on aggregate mean scores and distributions for various scales during a class session. Both of these formative assessments encouraged students to reflect on their identities and value systems, homogeneity and variation within the group, and their preparedness and motivations to engage in learning through the course of the program.

Table 3.1. *BEVI Structure, Scales, and Sample Items (Acheson, et al., in press, 2019 c).*

Domain	Scale	Description	Sample Items
Validity Scales	Consistency	Responses consistent for items assessing similar content	"People change all the time." "People don't really change."
	Congruency	Response patterns correspond to that which would be predicted statistically	"I have real needs for warmth and affection." "I take my own feelings very seriously."
Formative Variables	Background Information	Demographic and experience items	"What is your gender?" "What is your ethnicity?"
	Negative Life Events	Difficult childhood; parents were troubled; life conflict/struggles; many regrets	"I have had a lot of conflict with one or more members of my family." "My family had a lot of problems with money."
Fulfillment of Core Needs	Needs Closure	Conflictual/disturbed family dynamics; stereotypical thinking/odd causal explanations	"I had a wonderful childhood." "Some numbers are luckier than others."

Table 3.1 continued

	Needs Fulfillment	Open to experiences, needs, and feelings; deep care/sensitivity for self, others, and the larger world	"We should spend more money on early education programs for children." "I like to think about who I am."
Tolerance of Disequilibrium	Basic Openness	Open and honest about the experience of basic thoughts, feelings, and needs	"I don't always feel good about who I am." "I have felt lonely in my life."
	Self Certitude	Strong sense of will; impatient with excuses for difficulties; emphasizes positive thinking; disinclined toward deep analysis	"You can overcome almost any problem if you just try harder." "If you play by the rules, you get along fine."
Critical Thinking	Basic Determinism	Prefers simple explanations for differences/behavior; believes people don't change	"AIDS may well be a sign of God's anger." "It's only natural that the strong will survive."
	Socioemotional Convergence	Open, thoughtful, pragmatic, determined; sees world in shades of gray	"We should do more to help those who are less fortunate." "Too many people don't meet their responsibilities."
Self Access	Physical Resonance	Receptive to corporeal needs/feelings; experientially inclined	"I am a free spirit." "My body is very sensitive to what I feel."
	Emotional Attunement	Emotional, sensitive, social, affiliative; values the expression of affect	"I don't mind displays of emotion." "Weakness can be a virtue."
	Meaning Quest	Searching for meaning; seeks balance in life; resilient/persistent; concerned for less fortunate	"I think a lot about the meaning of life." "I want to find a better sense of balance in my life."
Other Access	Religious Traditionalism	Highly religious; sees self/behavior/events as mediated by God/spiritual forces	Without religion there can be no peace." "There is one way to heaven."

Table 3.1 continued

	Gender Traditionalism	Men and women are built to be a certain way; prefers traditional/simple views of gender and gender roles	"Women are more emotional than men." "A man's role is to be strong."
	Sociocultural Openness	Progressive/open regarding a wide range of actions, policies, and practices in the areas of culture, economics, education, environment, gender/global relations, politics	"We should try to understand cultures that are different from our own." "There is too big a gap between the rich and poor in our country."
Global Access	Ecological Resonance	Deeply invested in environmental/sustainability issues; concerned about the fate of the earth/natural world	"I worry about our environment." "We should protect the land no matter who owns it."
	Global Resonance	Invested in learning about/encountering different individuals, groups, languages, cultures; seeks global engagement	"It is important to be well informed about world events." "I am comfortable around groups of people who are very different from me."
Experiential Reflection Items		Three qualitative / free responses questions	"Please describe which aspect of this experience has had the greatest impact upon you and why?" "Is there some aspect of your own "Self" or "identity" that has become especially clear or relevant to you or others as a result of this experience?" "What have you learned and how are you different now?"

3.5.3   Analysis

For purposes of this study, researchers analyzed three scales that correlated with learning outcomes for the courses and three scales that produced the largest unintended changes. Course learning outcomes are listed in Table 3.2. Shealy (2016) notes that with extensive empirical

research in support, meaningful differences are assumed at a longitudinal change or between

groups difference of 5 points or higher on the normed scales (which range from 1-100).

Table 3.2. *At the completion of the semester long course, including a 9-day SA* to Vietnam, the 11 undergraduate student participants should be able to:*

Intercultural Learning	Agriculture Content
- Discuss the differences in common agriculture practices between cultures - Identify cultural differences and process those differences by establishing cross-cultural ideas - Identify values and beliefs and determine how they have shaped their own culture - Demonstrate team work by constructing solutions to a concern in the visiting country's agriculture system	- Inquire and discuss topics of personal, professional, and/or academic interest - Communicate effectively, contribute to a team, compare and contrast ideas, critically examine topics of current interest and emerging issues, and function in unfamiliar and changing environment - Demonstrate understanding of culture, opportunities, and challenges in international agriculture as a means for improving students' ability to locally address global issues

*SA – Study abroad, occurred at week 10.

The three scales related to course outcomes are 1) Sociocultural Openness, where high

scores indicate willingness to consider other cultural worldviews and value systems, as well as

willingness to interact with culturally different others; 2) Socioemotional Convergence, where

high scores demonstrate consciousness of the self in relation to broader contexts, resulting in

nuanced and complex understandings of events, people, and phenomena (grey-area rather than

black-white thinking); and 3) Ecological Resonance, where high scores illustrate strong

investment in environmental issues, connection to the natural world, and concerns regarding

sustainability and the protection of natural resources (Wandschneider et al., 2015).

In addition to the these three scales that align well with course learning outcomes, three

further scales less explicitly connected to course outcomes were also analyzed because T1-T2

change was documented, although not deliberately sought: 1) Meaning Quest, where high scores

are indicative of a tendency to deeply consider philosophical questions, to habitually search for higher meaning or purpose, and to seek balance and attunement; 2) Negative Life Events, where high scores reflect a traumatic upbringing or a childhood and youth full of physical/material challenges, psychological struggles, and/or conflict; and 3) Needs Fulfillment, where high scores suggest attention to one's needs, a commitment to self-care as well as caring for others, and a strong sense of self-efficacy (Wandschneider et al, 2015). See Table 3.1 above for sample items from these six scales.

3.6   Results

While there was 100% response rate, one post-test administration was removed from analysis because it failed validity checks for the test administration. This removal occurs automatically in the report generation if low consistency or congruency scores manifest. Results presented include the remaining participants (n=10). Student demographics included 45.4% (n=5) male and 54.6% (n=6) female, 45.5% (n=5) first year, 18.2% (n=2) second year, 27.3% (n=3) third year, and 9.1% (n=1) fourth year.

3.6.1   Sociocultural Openness (Figure 1)

For the first of the related scales, there was little difference between T1 and T2 outputs as a group. However, at the gender and ethnicity levels, several differences emerged. Male participants (n=4) meaningfully increased (9 points) in this scale in the *Other Access* domain. On the other hand, we see a meaningful decrease (12 points) by the Noncaucasian participants.
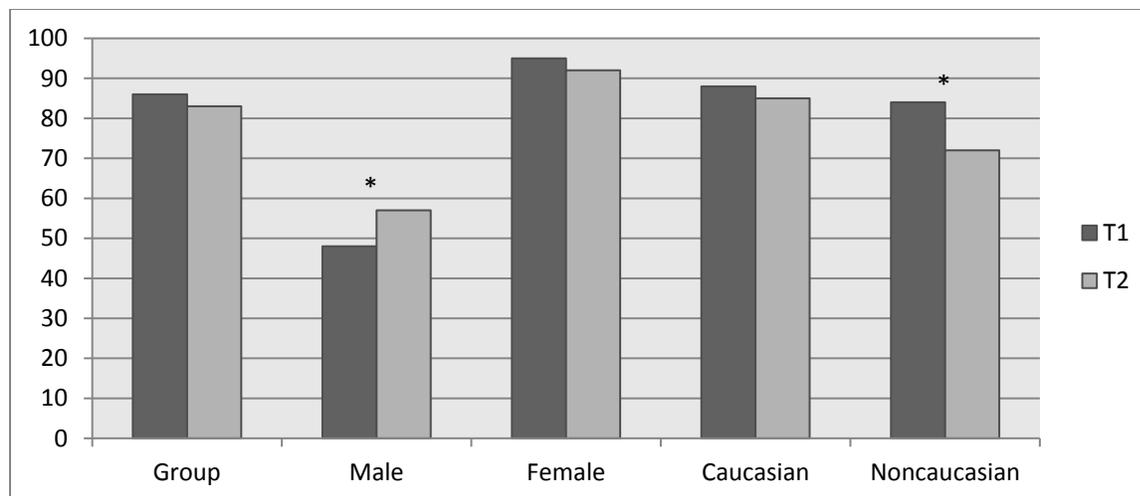
Figure 3.1. *Sociocultural Openness. *indicates a meaningful difference*

3.6.2 **Socioemotional Convergence (Figure 2)**

In the Socioemotional Convergence scale, which is in the *Critical Thinking* domain, we note a meaningful decrease (17 points) as a group (n=10) from T1 to T2. The gender and ethnic layers show that all but the group of male participants displayed a meaningful decrease (Female, 19 points; Caucasian, 8 points; Noncaucasian, 52 points).
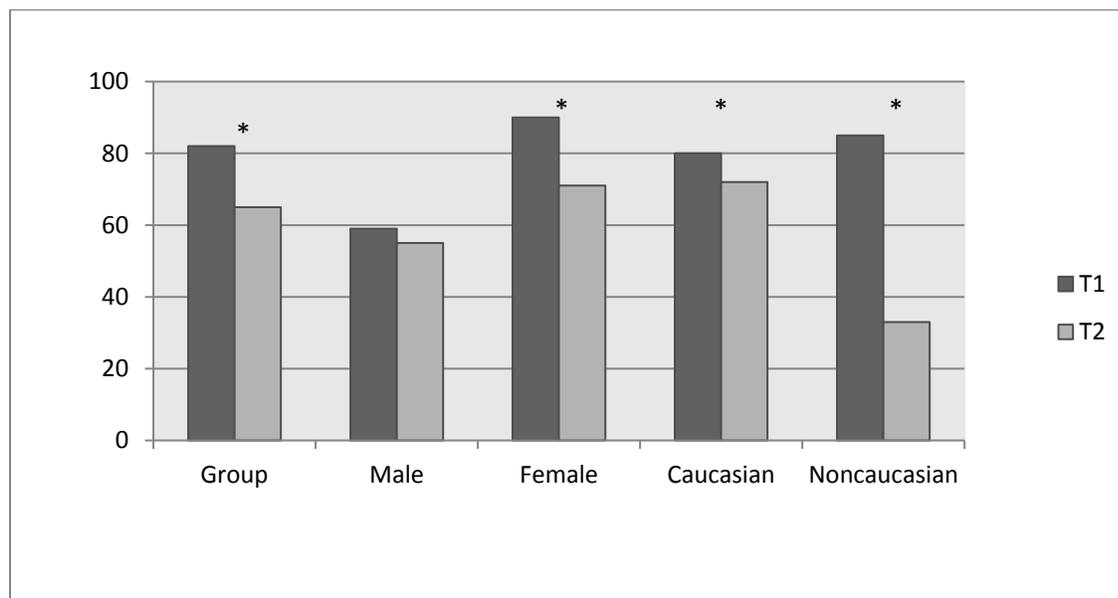
Figure 3.2. *Socioemotional Convergence. *indicates a meaningful difference*

3.6.3   Ecological Resonance (Figure 3)

The Ecological Resonance scale in the *Global Access* domain displayed no meaningful change at the group level. At the gender and ethnic levels though, there are varying results. There is meaningful increase by male participants from T1 to T2 and a meaningful decrease by female participants. Also, while Caucasian participants remained nearly the same, Noncaucasian participants meaningfully decreased.
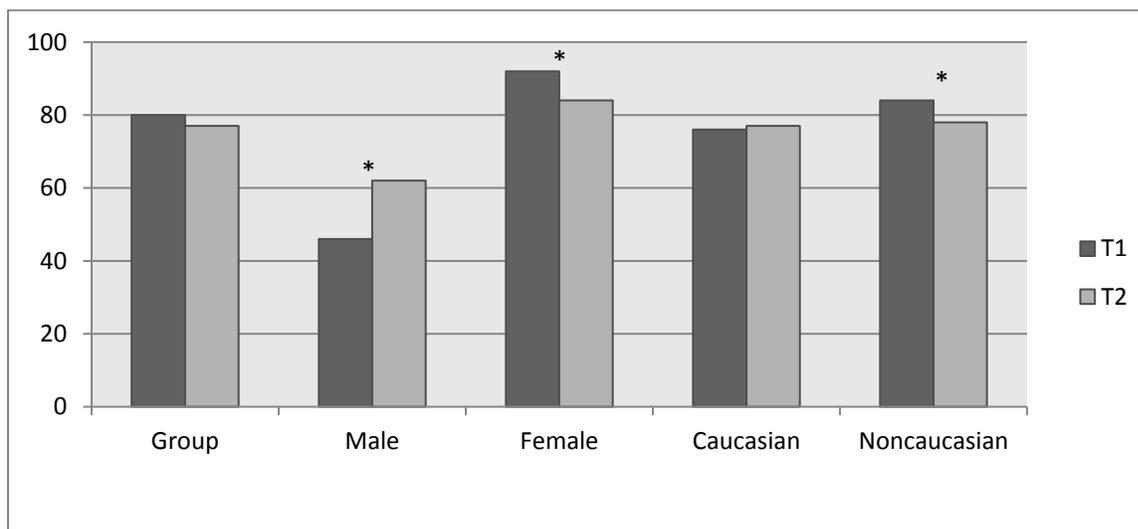
Figure 3.3. *Ecological Resonance. *indicates a meaningful difference*

3.6.4   Meaning Quest (Figure 4)

Meaning Quest is a *Self Access* scale in which researchers identified meaningful change from the group, gender, and ethnic levels. As a group, participants decreased an average of 22 points. Reflected in the group average, both male and female meaningfully decreased (M, 23 points; F, 17), and both Caucasian and Noncaucasian participants meaningfully decrease (C, 12; NC, 36).
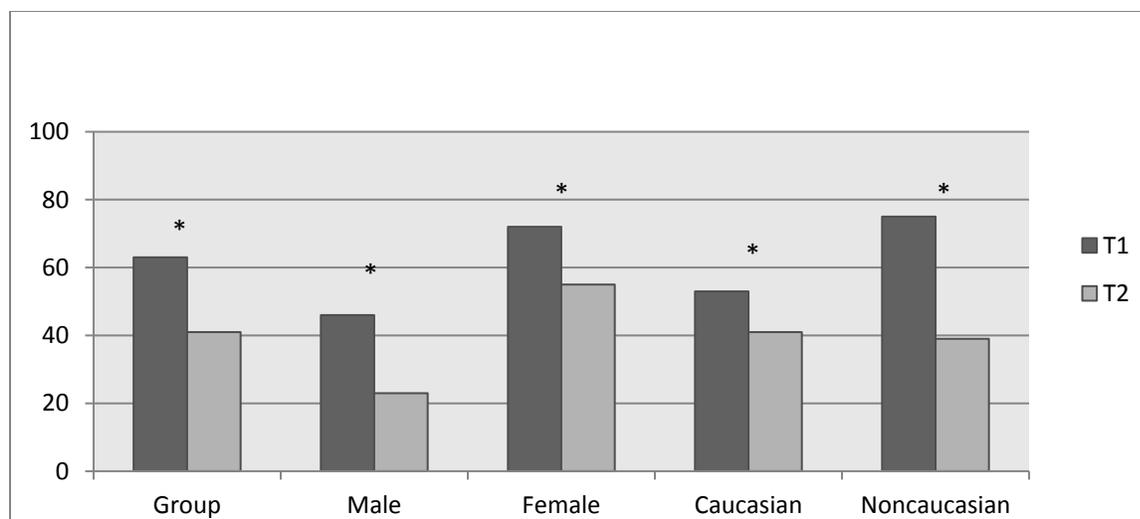
Figure 3.4. *Meaning Quest. *indicates a meaningful difference*

3.6.5 Negative Life Events (Figure 5)

The Negative Life Events scale is a *Formative Variable.* The results of the group show a meaningful decrease from T1 to T2 (9 points). Subsequently, the program male and female group of participants and Caucasian group of participants showed meaningful decreases (M, 12 points; F, 6; C, 10 points). On the other hand, Noncauacasian participants meaningfully increased (NC, 5 points).
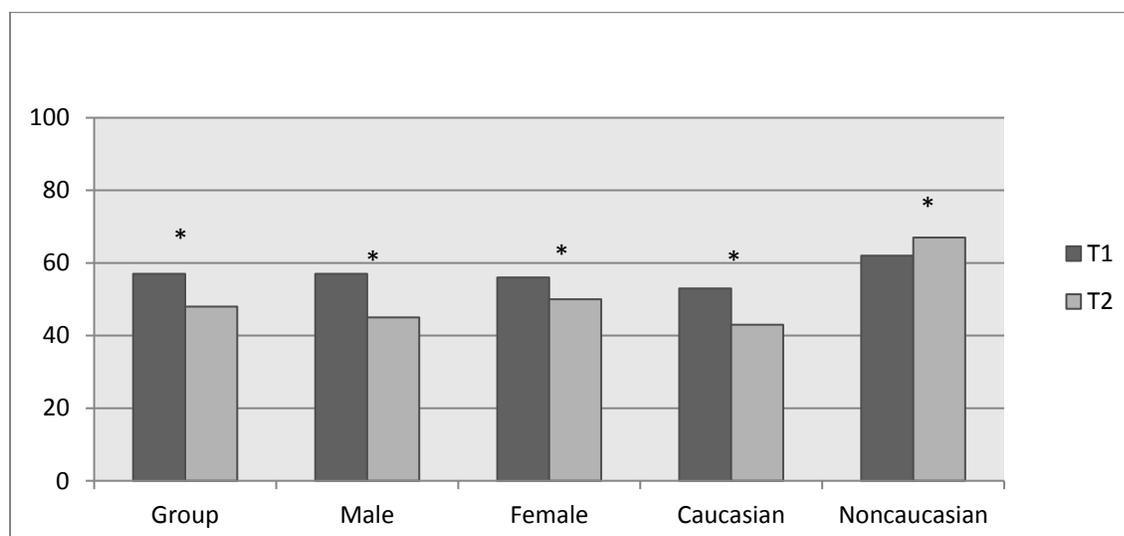
Figure 3.5. *Negative Life Events. *indicates a meaningful difference*

3.6.6 Needs Fulfillment (Figure 6)

Lastly, the Needs Fulfillment scale is in the *Fulfillment of Core Needs* domain. The results of the group show a meaningful decrease of 9 points. The program's female group of participants and Noncaucasian group of participants are both reflected in the meaningful group decrease (F, 11 points; NC, 31 points).
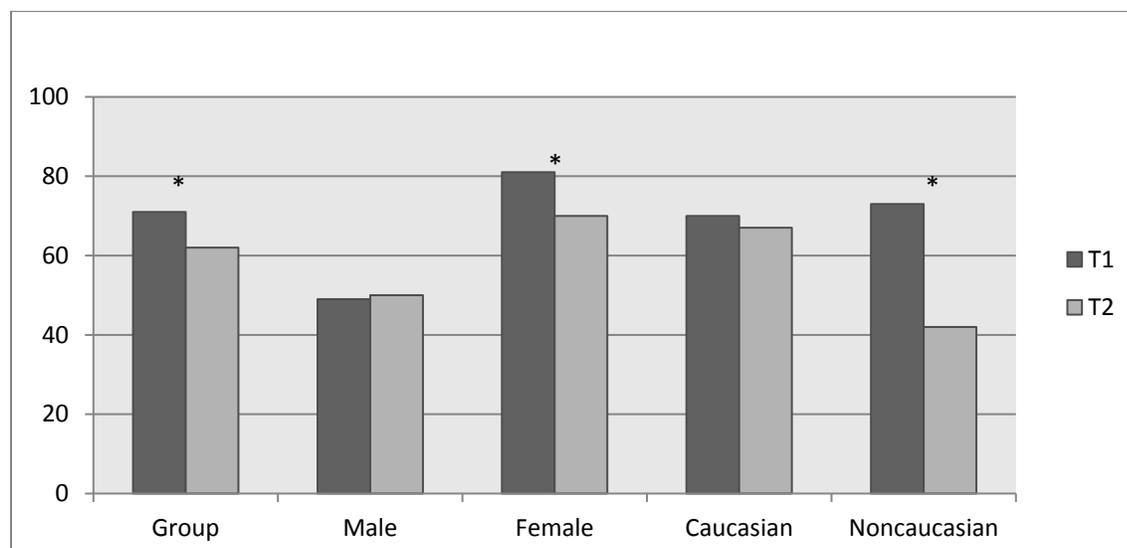
Figure 3.6. *Needs Fulfillment. *indicates a meaningful difference*

While the group means can be broken down into gender and ethnicity, quantitative results can be broken down into deciles as well. Deciles are important to show the spread of participants across the two time points and are crucial for understanding group distribution. As can be seen in Table 3.3, with regard to Negative Life Events, it is clear that there was a shift from the polar ends (1 and 10) towards the middle, but most movement was from the highest (10) down the scale. This indicates that there are now less rigid beliefs about their negative experiences, or a change in perspective about them. Next, those with Needs Fulfillment scores in the lowest decile increased their fulfillment of needs, but on the other hand, students in the highest decile shifted down. This also displays a less polarized spread (multiple peaks at opposite sides of the deciles)

of the course participants. Similarly, Socioemotional Convergence indicates a similar pattern. Students in the lowest bracket developed over the course of the semester, increasing on the scale. In contrast, those with high scores decreased slightly.

Participants were polarized in their position on the Meaning Quest scale (Table 3.3). The lowest deciles indicate more pragmatic thinking while the high end indicates a more philosophical thinking process. Participants on the highest end predominately shifted towards a more pragmatic view over the course of the semester. In Sociocultural Openness, there was little movement from participants on the highest end of the scale, but a large shift is present from the lowest end of the scale. Lastly, those that were at the low end of Ecological Resonance move further towards the middle, while those on the highest end moved down. The spread is more even than polarized, and shifted to the higher end following program participation.

Table 3.3. *Student participant (n=10) spread across 6 Beliefs, Events, and Values Inventory (BEVI) scales.*

	Deciles:	1	2	3	4	5	6	7	8	9	10
Negative Life Events	T1	36	7	0	0	0	7	0	14	0	36
	T2	30	0	0	0	20	20	0	10	0	20
Needs Fulfillment	T1	29	0	7	0	0	7	0	7	14	36
	T2	0	0	0	20	20	10	10	10	20	10
Socioemotional Convergence	T1	29	0	0	0	0	0	7	7	7	50
	T2	0	0	20	10	0	10	10	10	30	10
Meaning Quest	T1	29	7	7	0	7	0	0	7	7	36
	T2	20	0	10	20	10	10	10	10	10	0
Sociocultural Openness	T1	29	0	0	0	7	0	7	0	7	50
	T2	0	0	0	0	20	10	10	10	10	40
Ecological Resonance	T1	21	0	0	14	7	7	0	0	0	50
	T2	0	0	10	10	10	0	0	30	20	20

3.7   Discussion

While the course learning outcomes indicate that students should develop in the areas related to scales 1) Sociocultural Openness, 2) Socioemotional Convergence, and 3) Ecological Resonance, results indicate little to no overall gains and even display a meaningful decrease on the second scale noted here. For the first and third of these, Sociocultural Openness and Ecological Resonance, a lack of growth in the group aggregate scores is not surprising because of how high the T1 scores were. High scores on these scales are likely due to the self-selection into a study abroad program of this nature and make it statistically more likely that participants would regress rather than progress. There was little room to advance from group mean scale scores of 86 and 80, respectively, out of 100. There was no meaningful change, indicating the group remained high in a willingness to be open to differences and in investment in environmental issues. The second scale, Socioemotional Convergence, decreased meaningfully over the course of the semester. Again, this result is not unusual for educational courses or programs that provide opportunities for learners to encounter significant cultural differences. Overstimulation and instability can be caused by the overwhelming experience of being in a foreign environment (Stuart, 2012) and coping responses to these stresses are sometimes expressed as regressions on intercultural assessments (Lambert Snodgrass, Morris, and Acheson, 2018).

Unintended change exposed through BEVI results among this group were meaningful downward shifts on scales 1) Meaning Quest, 2) Negative Life Events, and 3) Needs Fulfillment. A decrease in Meaning Quest indicates that participants valued less philosophical analysis or believed that searching for the purpose in life was less of a priority following participation in this course. A decrease in Needs Fulfillment indicates that following participation in the program, as compared to the beginning of the program, learners felt less self-efficacy and more of their needs

were unmet. Similar to the discussion above of Socioemotional Convergence, these results, although not anticipated by course leaders, can be explained by the normal, and potentially short-term, reactions of students to the physical and psychological stresses of cultural adaptation (Wandschneider et al., 2015). Decrease presented on the Negative Life Events scale could be considered a positive outcome, as it indicates that student participants had altered their perception of the negative events and challenges encountered throughout their upbringing, finding them less traumatic after having experienced life in a different cultural context. However, Noncaucasian participants had a starkly different response on the Negative Life Events scale by increasing meaningfully. Students from different identity groups have different experiences abroad; realization of minority status can heighten awareness of students' identity within the group and can cause further stress (Savicki and Cooley, 2011). The destination of Vietnam, a developing country vastly different from the United States, provides a contrasting perspective, which enables increased cognitive dissonance resulting in the current data (Lee and Negrelli, 2018).

Forming new beliefs and values is not a simple procedure. EI theory describes the foundation of our beliefs and values system as a strong, well-developed structure (Shealy, 2016). In order to replace an existing portion of this structure, breaking down of the building blocks of that structure is necessary. Reforming this foundation takes time, so while students in this study decreased across many of the scales discussed here, it is expected that with sufficient time to process, using a T3 testing or delayed posttest data collection, it is predicted that BEVI scores will not only recover but surpass their original scores (Wandschneider et al., 2015; Lambert Snodgrass et al., 2018)

The gender differences that are highlighted in the data also align with previous research. Students in this cohort were higher to begin with than baseline BEVI reports from a large STEM university on: Sociocultural Openness, Socioemotional Convergence, and Ecological Resonance (Shealy, 2016). However, our study is a small sample from a large STEM university. The differences between the male and female subgroups represent typical differences present between genders (Shealy, 2016). On the other hand, both male and female students demonstrated having similar beliefs about their Negative Life Events. Studies have discovered multiple variations between male and female experiences throughout study abroad programs (Rexeisen and Al-Khatib, 2009; Wielkiewicz and Turkowski, 2010). Study abroad provides a new

environment and cultural interactions that can produce stress and anxiety among students (Ryan and Twibell, 2000; Dewey, Belnap, and Steffen, 2018). These stressful situations can generate emotional responses and studies have shown gender roles and expectations influence emotional responses and expressivity (Deng et al., 2016). These gender differences however, depend on the emotion experienced. Emotions that can be encountered throughout the duration of study abroad participation can include: shame/guilt, frustration/disappointment, and critical empathy (Laliberté and Waddell, 2017).

Disparate outcomes, both at the start and end of the semester, between gender and ethnicity indicate that individual needs of support vary between students as influenced by the intersectionality of their identities. Furthermore, Dewey et al. (2018) indicate that stress among students during study abroad programs can be compared to major life stressors that can inhibit learning and even be considered debilitating. Stress can be induced upon return from study abroad as well, including potential changes in relationships and skepticism of the home culture, though these items are not considered negative outcomes (Wielkiewicz and Turkowski, 2010).

These stressors are cognitively and emotionally burdening, requiring sufficient time to allow students to process the cognitive dissonance they experience during intercultural encounters (Lambert Snodgrass et al., 2018).

Students being challenged with experiences provided through study abroad programming and intercultural learning benefit from formative assessment emphasizing affective behavior (Iyer, 2013). While reflective assignments prompted students to incorporate emotionality into their learning assignments during the semester, utilizing a tool to gauge students' feelings more objectively may have also informed program leaders of the need to provide more effective psychological support. Gains in content knowledge, while a critical study abroad component, are inhibited if students are not affectively supported or prepared; students with lower affective stability, or less emotional coping strategies, have a harder time adjusting to situations abroad, including poorer psychological adjustments and behavioral performances (Savicki, 2013). It is evident that in addition to intercultural learning activities, traveling abroad, and discipline content, emotional support is required.

Female students dominate the Animal Sciences major (Buchanan, 2008) and goals have been implemented to increase and empower underrepresented minorities in agricultural and STEM programs (Merzdorf, 2017; MANRRS, 2019). This raises the question about how higher education is supporting different student populations. Challenges are faced by students due to their racial, ethnic, and gender identities, which are coupled with the challenges of studying in STEM fields (Brown, 2016). Lonsdale (2015) explores a unique way to engage students in exploration of themselves and others through nontraditional classroom writing techniques. They found that providing an outlet for students to make sense of their identities and the complexity of those identities was a successful means of student support. In science majors, technical skills

cannot be the only skills developed; understanding people's multidimensional identities and their interactions with science must become a priority (Rahm, 2016).

Differences between gender and ethnicity in addition to the vast array of student positionality on scales analyzed in this study, as indicated in decile data, inform program leaders about the preparedness of students to engage in cross-cultural learning. For example, at T1, 29% of participants in this study were in the lowest decile of Sociocultural Openness, meaning that 3 of 11 participants were extremely hesitant to interact with culturally different others and unwilling to consider alternate viewpoints as valid. Preparedness in this case is an obstacle to learning. Students farthest from the learning outcomes of the course, with the most growth to achieve, have the least capacity to respond to challenging experiences in ways that support growth. In a study abroad program, to expect a participant to hold this value and belief is realistic. However, as indicated, participants are each unique and hold different worldviews. In that sense, the response of these "most-in-need" students to the program in this study is encouraging. Even when overall group aggregates did not change, on several key scales, including Needs Fulfillment, Sociocultural Openness, and Ecological Resonance, the students in the 1st decile (farthest from the desired learning outcome) grew the most, to the 4th and 5th deciles.

Using assessments, such as the BEVI, practitioners can analyze preparedness of the group and use results to enhance student learning (Earl, 2003). Material tailored to student experience level aids in ensuring a better learning outcome because they are more useful for students (Guskey, 2003). Additionally, formative assessments can provide valuable information about what is effective or not, which can be incredibly valuable in preparation for study abroad programs. Further analysis of formative course reflections may yield insight into the specific

effects of identity components at different time points throughout the semester. Assessments can be valuable assets in the classroom (Earl 2003; Guskey, 2003).

Beliefs and values are constructed through processes over long periods of time, creating a complex network that creates the foundation of an individual (Shealy, 2016). This foundation influences the framework used to make sense of experience, which in turn influences students' interactions with cultural differences. Results from this small sample indicate a variety of responses to experiences in the study abroad program. Group dynamics influence means, and without further evaluating subgroups or decile data, a different story is portrayed. Group data display a very polarized participant pool at the beginning of the program. Analyzing beyond group averages provides educators and researchers a more holistic view of their participant pool (Wandschneider et al., 2015; Krishnan et al., 2017).

3.8   Conclusions

Intercultural competence is a critical skill and learning outcome associated with many study abroad programs. Formative and summative assessment is essential in monitoring the development of intercultural competence throughout study abroad programs, including before, during, and after international travels. As both a formative and summative assessment tool, the BEVI provides a unique perspective of cohort composition of beliefs and values. BEVI results highlight student individuality, preparedness of students to interact cross-culturally, and program effectiveness and ineffectiveness in meeting course learning outcomes. The noble goal of creating global citizens through study abroad is multidimensional and not an easy task to accomplish. Strategic implementation of support to complement intercultural learning is necessary for success.

3.8.1 Limitations

Limitations in this study, which is reflected commonly in study abroad research, include a small, self-selected sample of learners that is an effective case study but is difficult to generalize to other programs. This was also a single group study with no comparison group, making it risky to make claims of causality for changes between T1 and T2. Additionally, the researchers had limited contact with participants after the completion of the semester program, inhibiting the ability to conduct a T3 assessment. In order to strengthen conclusions, these limitations can be addressed in future research.

3.8.2 Implications

This study has provided several implications for potential application in similar study abroad programs. These implications are categorized in two themes: 1) the individualized student and 2) criticality of assessment aligned with learning outcomes.

1A) Instructors must first and foremost understand who their study abroad participants are in order to design effective curriculum and support. Students begin at varying levels and each come into a program holding unique values and beliefs shaped from their life experiences.

1B) Additionally, a critical component of understanding student participants is recognizing the intersectionality of identities each student possesses and how the multidimensional nature of identity influences their worldview. Students vary in gender, ethnicity, and educational, or travel, experience and background; these variations require differences in support levels.

1C) The BEVI is a validated and reliable assessment tool that highlights students' beliefs and values, informing study abroad instructors of participant preparedness to interact in a

different culture. Without the right support, backlash may ensue and result in students not attaining, or moving farther from, course learning outcomes.

2) Formative assessment in behavior, emotional, and other affective levels associated with learning outcomes is pertinent to student learning. Affective experiences can help or hinder what students are retaining from cognitive learning goals. Course design should reflect not only the knowledge and skills, but additionally, the attitudes needed to meet course learning outcomes.

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CHAPTER 4.   INTEGRATING EXTENSION EDUCATORS IN AGRICULTURAL STUDY ABROAD PROGRAMMING

A version of this chapter has been submitted for review.

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4.1   Abstract

Developing intercultural competence is imperative to successfully communicate and operate in evolving American communities shaped by diversity. The Cooperative Extension System serves as the liaison between the public and the land-grant university. As our nation continues to diversify and globalize, it is critical that as liaisons, Extension Educators have the skills to communicate cross-culturally in their respective communities. The objective of this study was to describe the change in educator intercultural development during an embedded study abroad program to Vietnam. Five Extension Educators were selected to act as mentors to undergraduate students as the students participated in a semester-long course with international travel during week 10. Mentors were required to complete pre- and post-assessments, including the Intercultural Development Inventory, while also responding to reflective prompts during the program. As a group, the Educators regressed on the intercultural continuum by 8.0 points, but remained in the minimization stage. However, Educators reported meeting goals, increased personal development, and a positive experience with the program. Future programming should focus on the undergraduate mentor-educator relationship and more deliberate intercultural guidance for Educator participants.

Keywords: Extension, IDI, Intercultural Competence, Mentor, Study Abroad

4.2   Introduction

Extension Educators must be able to effectively communicate with the diverse populations that compose their clientele base. Effective cross-cultural communication requires intercultural competence. Intercultural competence is defined as the ability to deduce cultural meanings and communicate effectively with the understanding that complex identities make up the environment in which people interact (Chen and Starosta, 1996). These abilities are not innate and must be developed through intentional instructional methods and practice (Lockett et al., 2014; Jackson, 2015; Vande Berg et al., 2012). While intercultural competence is clearly needed when working at the international level, as domestic demographics continue diversifying, it becomes more urgent that local representatives possess these skills as well. Providing Extension professionals with international experiences through engagement in university affiliated study abroad is one potential method to encourage professional development (Lockett et al., 2014; Ludwig, 2002; Harder et al., 2010).

In a needs assessment of the State of Indiana, Selby et al. (2005) explored Extension interests in intercultural learning, experiences with intercultural learning, and barriers prohibiting Educator participation in international and intercultural opportunities. They reported that 78.5% of Educator international travel was for leisure and there was limited fusion of global aspects into Educator domestic programs. Primary barriers to educator involvement with international activities included limited previous experience and lack of prioritization of international activities by Cooperative Extensions Services (CES) administration. Daniel et al. (2014) created a Cross-Cultural Program for CES personnel to develop participant worldview perspectives and gain new cultural knowledge for Educators in Georgia. This small study (n=7) discovered several

benefits of the program including enhanced cultural appreciation and gaining first-hand experience with undergraduates and another culture. Harder et al. (2010) also highlighted the professional and personal development opportunities presented by engaging Florida Educators in hands-on experiences, such as socializing with Extension professionals or citizens of a host country (n=191). Deen et al. (2014) developed and implemented cultural competence training in order to address the increasing need for Extension Educators to possess skills to sustain effective programming across the developing diverse clientele base and workspaces. Cultural competence is considered an essential skill within Washington State University's Extension and is even considered in performance reviews due to its necessity in effective outreach. International experiences can empower Extension Educators to make better-informed local decisions by allowing the Educators to examine problems through a global lens (Treadwell et al., 2013).

Although research exists on Extension affiliates' experiences traveling internationally, limited research is available evaluating the impact of involving CES personnel directly in university study abroad programming. Such programs could provide benefits for both the undergraduate students as well as the Extension Educators (Karcher et al., 2013; Treadwell et al., 2013; Grima et al., 2014; Laverick, 2016). Involving Educators as mentors to undergraduate students participating in the study abroad program provides an opportunity for Educators to become directly engaged in international programming (Karcher et al., 2013). In this space, where Educators are mentoring students, there is an opportunity to model behaviors such as teamwork and effective leadership (Gyori, 2012). The concepts (e.g. agricultural practices or cross-cultural skill development) that the mentor focuses on while mentoring students have a direct effect on the student learning experience (Gyori, 2012).

In addition to Extension Educators' responsibility to the public, they are presented the opportunity through their land-grant institutions to build relationships with student populations. Undergraduate student exposure to Extension is mutually beneficial as the interaction can serve to recruit students to Extension careers (Arnold and Place, 2010). Having direct experiences or relationships with Extension professionals were cited by students as being the most influential in their pursuit of careers in CES and their ultimate decision to become an Extension Educator (Arnold and Place, 2010). As recruiting and retaining potential educators is a priority of Extension (Penrose, 2017), embedding Extension Educators in a study abroad program can have the dual benefit of improving Educators' intercultural competence while fostering the types of Educator/student relationships that encourage talented students to pursue careers in Extension.

This case study was designed to explore the benefits for students and Educators by engaging Extension Educators as mentors to undergraduate students in a short-term study abroad program. Researchers hypothesized that: 1) the role of mentorship would be positively perceived by both students and Educators and 2) Extension Educators' intercultural competence would increase following Educator participation in the designed program.

4.3   Methods

4.3.1   Educator Recruitment, Selection, and Responsibilities

All methods were approved by Purdue University's Institutional Review Board. In fall 2017, an application was made available to all Extension Educators in Indiana to participate in the program. From the applications, five educators were selected to participate and serve as mentors to the undergraduate students enrolled in the study abroad course, travel with the program to Vietnam, and to participate in activities related to intercultural development throughout the one-semester course. The composition of the Educator cohort was 20% female

and 80% male. All Educators had previous international experience, although time spent out of the United States varied from 4 to 8 weeks (60%, n=3) to more than one year living in another country (20%, n=1). All program participants had been in their role with Cooperative Extension Services for more than 15 years. The cohort of Educators represented five of Indiana's 92 counties, providing a variety of county demographics.

4.3.2 Educator Mentor Role and Program Responsibilities

Throughout the program, Extension Educators served not only as subject matter experts in their individual areas of expertise in agriculture, but as agricultural discipline mentors (i.e. providing insight into U.S. agricultural practices and using expertise to aid students throughout a semester project) to the undergraduate students. Eleven undergraduate students, representing majors from across the College of Agriculture, enrolled in the spring 2018 embedded-study abroad program. Students met weekly on-campus for 50 minutes throughout the 16-week semester and traveled to Vietnam for 9 days during Spring Break. At the start of the semester, students were divided into four teams (3, 3, 3, and 2 students) with each team assigned one Educator/mentor. The team consisting of two students was assigned to 2 Educators/mentors. Educator expertise provided students with a resource in their focus on food security and environmental challenges within the course by being an involved team member throughout the duration of the course. Each team was tasked with identifying a challenge in the current Vietnamese agricultural system through individual researching. Teams worked with their mentor to identify a topic and a research plan. The semester long project concluded with a Vietnamese Celebration night where students and Educators shared videos (8-10 minutes each) they prepared to address the research topic and discuss innovative solutions. Faculty, administrators, students, and family were invited to the dinner and presentations. Throughout this process, the Educators

served to: 1) provide input on student assignments via email or phone; 2) present one lecture to the students based on their area of expertise; 3) participate with their assigned team of students on creating the videos for the semester-long research project; and 4) travel to Vietnam alongside students and program leaders.

In addition to the mentor role, Educators participated in self-reflective activities during the international experience (week 10). In-country, reflective journaling included daily responses to provided prompts designed to engage Educators in reflection on their daily experiences. Examples of these include: What was something you learned about Vietnamese culture/agriculture that surprised you today?; Why did this surprise you?; and How have cultural differences made you more aware of your own culture (limitations, strengths, or biases)? While in Vietnam, educators visited local markets, interacted with students and faculty at an agricultural university, and engaged with local farmers. Additionally, program leaders facilitated intercultural learning activities (e.g. including group discussions and debriefs following cultural site visits) throughout the program. The goal of the journaling and in-country experience was to assist in developing students' and Educators' intercultural competence.

4.3.3   Program Assessment

A researcher-developed pre-questionnaire was created and administered to the Educators during week 2 of the semester. The questionnaire included 4 open-ended questions designed to capture Educators' goals, international involvement, and plans to incorporate learning after participation. The survey was administered via Qualtrics and was open to response for one week (n=5, 100% response rate). The researcher-developed post-questionnaire was administered at week 15 of the semester via Qualtrics and included 6 open-ended and 12 Likert scale questions, designed to capture Educators' experience as a mentor, how they incorporated international

components locally, their overall experience in the program, and 3 demographic questions (n=5, 100% response rate). Questions about international involvement, perceptions of importance in infusing international concepts into local Extension programming, and prompts for reflection were influenced by previous study abroad and international research (Selby et. al., 2005; Price and Savicki, 2011). Additionally, students on the program responded to a post-course questionnaire that included 8 open-ended questions designed to assess the value of the Educator-student mentoring relationship.

The Intercultural Development Inventory (IDI) was administered to Educators both at weeks 1 and 15 of the semester. The IDI is a 50-item inventory that can be accessed online which places individuals on a continuum of intercultural sensitivity (IDI, 2018). The numbers reported in perceived orientation (PO), developmental orientation (DO), and orientation gap (OG) correlate with a developmental stage on the Intercultural Development Continuum (IDC). There are several levels of intercultural sensitivities that fall along the IDC. These levels are separated into ethnorelative stages, "meaning that one's own culture is experienced in the context of other cultures," and ethnocentric stages, "meaning that one's own culture is experienced as central to reality in some way" (Hammer et al., 2003). Denial and polarization fall within ethnocentric, minimization is seen as a transitionary stage, and acceptance and adaptation fall within ethnorelative (Hammer, 2012).

4.3.4   Statistical Analysis

The DO, PO, and OG of the educators were compared using paired t-tests on sample means using SPSS Statistics Version 25 (IBM Corp, 2017). Statistical significance is reported at a $p < .05$.

4.4   Results

4.4.1   Mentoring Experience

Educator and student participants responded to two open-ended questions about the role of mentorship in the program. In response to the question *In what ways did your mentor add value to your semester project?,* students primarily indicated that mentors provided new perspectives and insights about course topics. Educators indicated learning from student perspectives and enjoying getting to work directly with them as benefits in response to *How did the mentor role benefit your international experience?* Both educators and students reported that the relationship provided new perspectives from which to view the course concepts.

One student stated that "they were able to teach us about things that we do differently inside the United States" while another said "they did a great job giving us insight we didn't even think about." Educators (80%, n=4) specifically noted that they enjoyed learning and/or working with the student participants. One Educator reported "I got to see the experience not only through my own eyes but through the eyes of a younger generation." Another Educator mentioned they wished they could spend more time together, but during the time they did spend with their assigned students "it was valuable to hear their perspectives and the knowledge they brought to the table." A conclusion provided by an Educator was that "each time we have an opportunity to mentor or teach, we get better at what we do." A majority to the Educators (80%) indicated that they strongly agreed or agreed that being a mentor to undergraduate students was an important part of the Vietnamese program experience. Mentorship was perceived by the majority as an enhancement to participation in the program.

4.4.2   Professional Benefits

The group of Educators responded to three open-ended questions about their participation following the semester program (week 15). Themes emerged in responses to all three questions (Table 4.1). Educators believed they met goals of understanding more about the culture in which they were immersed. They also reported that they developed new worldviews due to their experience in the program. Lastly, they have put into action sharing their experiences, within the semester time frame, with their local communities.

Table 4.1. *Themes Highlighted in Educator Responses to three open-ended questions (A-C).*

Questions	Themes
A. *Did you achieve the goals you had for yourself in participation of this program? If so, how did you achieve your goals? If not, why not?*	• Gain an understanding of the new culture. 3/5 used the word "understanding" while 1 used "learn about" • 3/5 felt they achieved those goals.
B. *How do you think your participation in this international and mentor experience may or may not impact your future teaching, research or Extension activities?*	• Developing worldviews/seeing a new perspective
C. *Has this program motivated you to globalize (i.e. incorporate intercultural/multicultural learning objectives) extension programs? If so, please explain how.*	• Share with community – by writing or incorporating in programs 3/5 had already done 1 or both

Educators reported being motivated to share what was learned throughout the program. Three of the five participants (60%) have already written about, presented orally on, and/or incorporated study abroad program concepts into their domestic CES programming. One Educator wrote "my goals were to increase my understanding of other cultures, how they relate to Indiana agriculture and reflect to the citizens of our community how global agriculture comes

home. I have successfully done that." Another indicated the value of the program in connecting beyond the local communities saying that "I have written articles in local papers about the trip and they have been well received. The program demonstrates that Extension is connected to a bigger world." In response to *Comparing agriculture systems across cultures enhanced my job as an educator,* 80% of Educators strongly agreed and 20% agreed. In addition, all Educators strongly agreed (80%) or agreed (20%) that they felt mentorship is important for personal and professional development.

The program also prompted the Educators to reflect on what was learned throughout their interactions in Vietnam. One Educator reflected, "I need to loosen my attitude of expecting everyone to look at the world the way I do" and suggested that pushing their viewpoint onto their clients is not an effective method for creating change. This indicates how interactions abroad challenged their perspectives on their local role in CES. Another example of development was the reflection that "the most important part of the trip was the fact that I was a bit uncomfortable at times. The trip was very good for me to push my boundaries and make me deal with situations." Increased flexibility can be a skill gained from facing challenges abroad.

4.4.3   Intercultural Development

Table 4.2 represents individual Educator results of pre and post PO, DO, and OG. Before the program, 4 out of 5 educators were in the DO stage of minimization while one was on the low end of acceptance. After the program, 1 of the 4 in minimization moved to polarization and the educator in acceptance shifted down to minimization. In polarization, individuals operate from a mindset of "us versus them" when faced with cultural differences (IDI, 2018).

Table 4.2. *Individual Extension Educator pre and post reported perceived orientation (PO), developmental orientation (DO), and orientation gap (OG) before and after completing a study abroad program to Vietnam.*

	Pre PO	Post PO	Pre DO	Post DO	Pre OG	Post OG
Educator 1	133.8	128.0	121.9	109.0	11.9	19.0
Educator 2	121.7	115.8	94.5	72.6	27.3	43.2
Educator 3	124.8	123.6	104.8	99.8	19.9	23.7
Educator 4	125.0	124.8	105.0	102.9	20.0	21.9
Educator 5	121.8	125.3	103.1	104.0	18.7	20.3

The pre PO for the group was 125.4 and the post was 123.5 (Figure 4.1). There was no statistically significant difference between the group pre- and post-PO. As a group, the educators placed themselves in acceptance both before and after participation in the program according to their subjective view (PO). This indicates that the group believes it operated in an ethnorelative stage that respects cultural difference as it is unique to individual identity and are in a state of curiosity (Bennett, 2014).
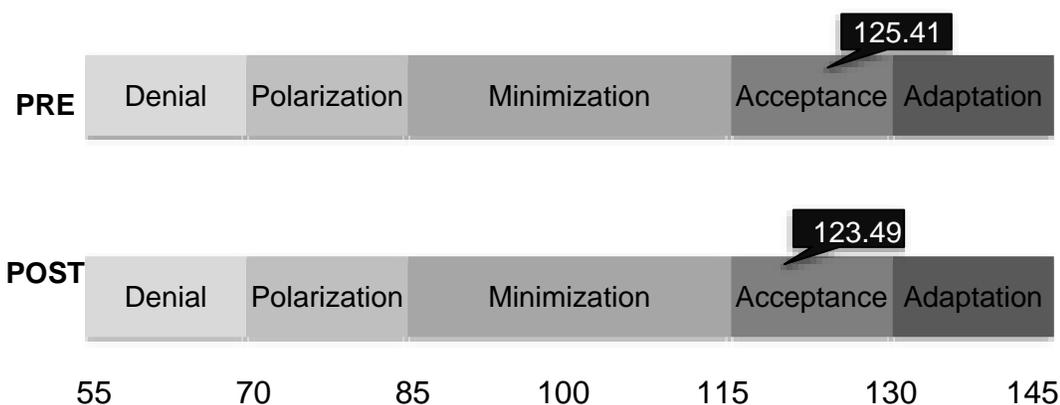

Figure 4.1. *Pre and Post Perceived Orientations for the group of 5 Extension Educators participating in an undergraduate study abroad program to Vietnam.*

At the start of the program, the group began with a DO of 105.86 and ended with a DO of 97.87 (Figure 4.2). These changes were not statistically significant, however, any change more

than 7 points is considered meaningful to IDI (2018). The subjective view of the group was in acceptance. However, the group's operational stage (DO) was in minimization. Groups in minimization tend to obscure differences, minimizing their importance, and use their own cultural perspective to apply in cultural contexts worldwide (Bennett, 2014).
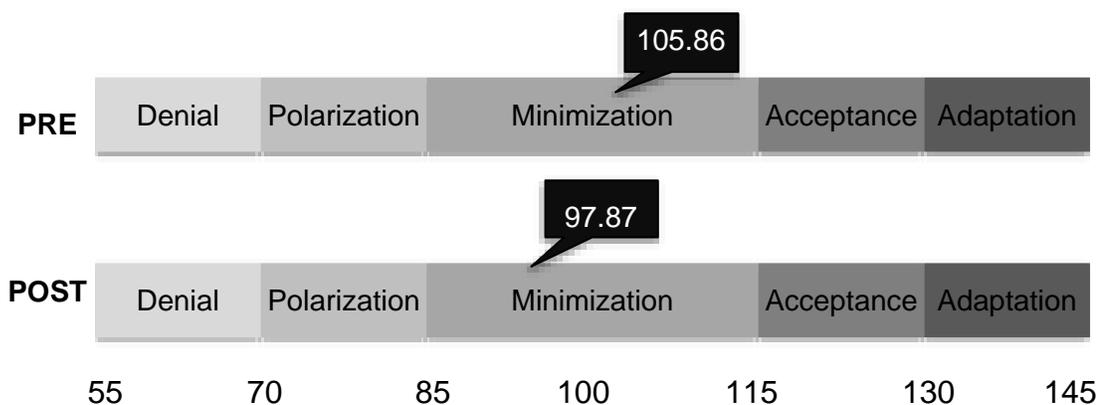
Figure 4.2. *Pre and Post Developmental Orientations for the group of 5 Extension Educators Participating in an undergraduate study abroad program to Vietnam.*

A PO seven points or above the DO (i.e. if the OG is more than seven points) signifies an overestimation of intercultural competence and is considered a meaningful difference according to the IDI (Hammer, 2012a). The OG changed from 19.55 to 25.62 from the beginning of the semester to the end. These results display an increase in overestimation of intercultural competence, however, there was no statistically significant difference from pre to post IDI.

The group of educators moved from 20% unresolved to 40% unresolved according to the pre and post IDI results (Figure 4.3). Unresolved indicates a sense of disengagement or a feeling of disconnection with their primary cultural group (IDI, 2018). After completion of the program, there was a 20% increase within the group of feeling detachment of membership in their community (Hammer, 2012a).

PRE
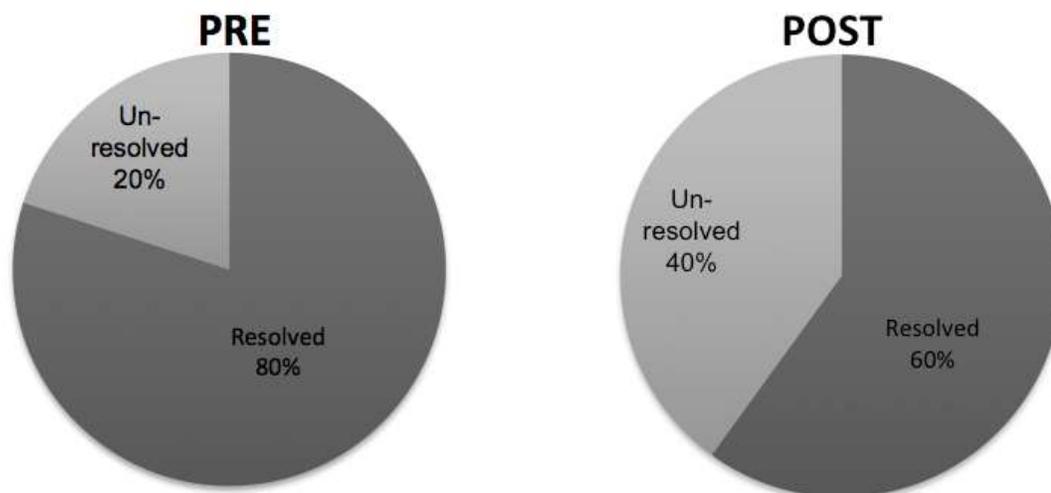
POST

Figure 4.3. *Pre and Post Cultural Disengagement for the group of 5 Extension Educators participating in an undergraduate study abroad program to Vietnam.*

4.5   Discussion

Mentoring can foster developmental changes in skills that may be applied both academically and socially (Karcher et al., 2002; Grima et al., 2014). Educators participating in the Vietnam course reported the student-mentor relationship as important to their overall experience. A nurturing learning environment provides support to students to strengthen their ability to develop identity and mastery of skills (Crisp, 2017). Students and Educators on the Vietnam program emphasized "insights" and "perspectives" by working together as a team. Relationship building is a key component of successful mentoring (Byington, 2010). Henley et al. (2018) reported mutual benefits for both Educators and students of Extension Educators mentoring undergraduates, including gaining an understanding of career opportunities in CES, developing a feeling of ownership in their projects, and expanding career potential. Such opportunities may increase the number of undergraduates interested in pursuing a career in Extension and build relationships across the teaching and Extension missions of Land Grant

institutions (Seevers and Dormody, 2010; Stevens et al., 2014). The responses provided by participants, such as "getting to see and learn from student perspectives" in addition to discussing their "experience and feelings during the trip" and an explicit statement that "it was very enriching for me", provided evidence that the Educators valued the mentoring experience.

Additionally, there were meaningful professional benefits to Educators from their participation in this program. Mentoring relationships are advantageous in the workplace, including Extension, to develop skills, enhance performance, and personal growth (Kutilek and Earnest, 2001). CES uses mentoring to develop employees in areas such as effective leadership, increased organizational commitment, and satisfaction in their roles (Denny, 2016). In response to open-ended questions, Educators reported meeting goals, increased personal development, and a positive experience in the program (Table 4.1). Their responses supported the belief that they met goals they set for themselves. Additionally the experience broadened perspectives. For example, one Educator said "a broad perspective is important" and another said "having more of a worldly view enhances my ability to be an Educator." This aligns with results from previous studies that Extension professionals broadened their knowledge and perspectives of global agriculture through international experiences (Stevens et al., 2014). Three of the five Educators in the program described here reported using the program experience to influence their CES outreach. Those Educators who had not yet incorporated the experience referred to lack of resources, such as time, as barriers. As reported, many Educator participants wrote articles or columns, while another discussed having "already incorporated some of what I learned in our educational programs." This indicates that involvement in university study abroad programs has the potential to globalize local programs, which is supported by previous findings in Educator participation in international programming (Treadwell et al., 2013).

In addition to the benefits of the program on Educators' personal and professional growth, a second objective was to determine if Educator intercultural development was altered by program participation. As a group, there was not progression on the IDC among Educators following participation in the program. However, there are several possible explanations. Foremost, the undergraduate course was designed with student intercultural development in mind, thus influencing the activities required for the entire class. While including intercultural learning methods, the appropriate degree and type of support provided is critical for intercultural development (Paige and Vande Berg, 2012; Engle and Engle 2012). A lack of intercultural development was evident in a previous study potentially because participants had not received support needed or been engaged with effective developmental methods (Terzuolo, 2018). Developmental orientation influences which activities will help progress participants along the continuum. While the majority of educators were in minimization at the start of the program, the class predominately completed activities that supported individuals in denial and polarization.

Stuart (2012) indicates that stage development must be considered when designing interventions. The ability to anticipate and influence outcomes depends on the student developmental stage, the environment in which they are placed, and the intervention administered; without these components, student development is, at best, uncertain (Stuart, 2012). Individuals in each stage on the developmental continuum have varying responses to cultural differences and experiences that require different support (Hammer, 2012; Vande Berg et al., 2012; Bennett, 2014). The course assignments were selected to develop student cultural self-awareness and awareness of others. These are skills that were already developed in the Educator group as indicated by the group stage of minimization on the IDC.

As a group, there was an average decrease of 8 points on the IDC. Regression on the continuum can occur as a result of overwhelming cultural differences (Jones et. al., 2016). This may have occurred as Educators traveled to a developing country vastly different from the United States. The Educators in this study increased in cultural disengagement (20% to 40%), indicating they experienced disengagement with personal cultural identity. Cultural disengagement can also be defined as not partaking in cultural activities (Gayo, 2017). Feeling disengaged with one's own cultural identity and being overwhelmed with cultural difference may have impacted the group results due to lack of participation or commitment to the intercultural learning activities included in the program. There are a multitude of factors that dictate cultural disengagement such as socioeconomic status, gender, age, and geographic location, which should be further explored in Educator intercultural development (Gayo, 2017).

It is critical to understand the multiple dimensions of cultural difference the Educator group encountered throughout the program. Not only were they immersed in Asian culture while visiting Vietnam, but Educators were also encountering generational differences. They were required to work with students, all identified in either the millennial or Z generation, on a group project as a mentor, travel with them in a different country, and serve as a university role model as affiliated with CES. These situations may have created additional challenges for Educators, who identified in generation X or Baby Boomer generation. When an individual is placed in an environment that challenges their personal beliefs or history, it can cause overwhelming feelings and cognitive dissonance (Mitchell and Paras, 2018). It can display itself as feeling uncomfortable and even decreases on the IDC (Lambert Snodgrass et al., 2018). The study abroad destination of Vietnam is another important nuance between Educators and students involved. Students and Educators have a different relationship with Vietnam. Students learned

about the Vietnam War in history classes while multiple educators were alive during this time and knew someone involved in the war. The intersection of ethnic and generational cultures begins to unravel complicated influences that may be contributors to the group IDI results.

Additionally, all Educators completed the IDI, but were not required to go through a debriefing with a certified administrator (i.e. meet face to face with an IDI trained professional in order to discuss and understand IDI results). Educators were not required to complete an IDI debrief due to their various locations around the state and proximity to a qualified administrator to go over individual results. Cultural mentoring is critical and plays a positive role in intercultural competence gains (Hammer, 2012; Paige and Vande Berg, 2012). The lack of individual cultural mentoring provided to the Educators may have influenced the outcome of the group IDI results. Educators participated in the course through intermittent reflections and by providing discipline-based guidance for the students. More deliberate activities, focused toward the Educator stage of minimization, may have provided the support needed to progress on the IDC (Stuart, 2012).

Future studies should engage Educators in more cultural activities and reflection. Paige and Vande Berg (2012) identify a lack of intentional reflection specifically on the cultural immersion and experience as a contributor to lack of intercultural development from participating in international activities. Increasing mentor interaction with students could prove beneficial for both groups, by increasing exposure to CES, providing different perspectives regarding discipline content and intercultural learning, and giving Extension Educators the opportunity to use experience for globalizing local programs. Educators should be required to complete the IDI debrief with a qualified administrator in order to process their results and develop an Intercultural Development Plan. Additional limitations included a small sample size,

limited face-to-face interactions between Educators and the course instructors and student participation before and after study abroad, self-selection of participants, and restricted authority over Educator participation in activities. Through use of intercultural learning methods with emphasis on experiential ideals such as critical reflection, and activities aimed to give support in the development of intercultural competence at multiple levels, this course design can be modified for use in other study abroad programs involving Extension Educators.

4.6   Conclusion

In conclusion, there were several meaningful benefits provided to both students and Educators from the participation of Extension Educators as mentors. Student and Educator responses support a positive attitude towards the mentor-student relationship. As indicated, rewards encompassed both personal and professional development. Educators reported meeting their personal goals and applying what they learned during the study abroad program in their local Extension programs. In regards to the intercultural competence development component, there were no statistically significant changes in group PO, DO, or OG. However, the survey responses provided useful insight on how to enhance future programs and engage Educators more meaningfully in the intercultural learning process. By addressing the challenges these participants encountered in the program, this model can be adapted and honed for amplified benefits. Future Extension Educators have the potential to engage students in agricultural concepts using their expertise, provide insight to students about CES local and international programming, and develop intercultural competence through mentorship in undergraduate study abroad programs.

4.7   Acknowledgements

4.8   References

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CHAPTER 5. EVALUATING INTERCULTURAL COMPETENCE IN A COMBINED LEARNING COMMUNITY STUDY ABROAD PROGRAM

A version of this chapter has been submitted for review.

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5.1 Abstract

Undergraduates studying in agricultural fields must be prepared to navigate in a global society. In this environment, intercultural competence skills are crucial characteristics sought by employers. Study abroad programs that employ deliberate intercultural interventions, or specific activities that foster intercultural competence development. A learning community-centered

study abroad program was developed for incoming first-year and second-year agricultural undergraduate students. Nineteen students visited Italy for 10 days in 2018 (July) with the intent of becoming familiar with global animal production practices. Following the in-country portion of the course, students met throughout the fall (2018) semester completing intercultural-related assignments. To assess intercultural competence of students throughout the course, the Intercultural Development Inventory was administered three times: one week prior to travel, week one of the semester, and the final week of the semester. Group intercultural competence did not significantly increase, although there was stage progression as a group on the Intercultural Development Continuum. Despite limited group growth, a wide range of individual movement was observed, 42% of the students advanced meaningfully on the continuum and 26% of the students progressed to a new developmental stage. These results indicate that students respond to cultural interactions differently, which indicate a need for intentional support throughout study abroad programs.

Keywords: Agriculture, IDI, Intercultural Competence, Learning Community, Study Abroad

5.2   Introduction

Food is interwoven into all cultures. How food is produced and how it reaches consumers however, has become highly globalized. At the same time, U.S. population demographics have shifted considerably, with both urban and rural areas becoming more diverse. In the last five decades, the over 59 million immigrants to the U.S. have shifted population demographics, globalizing local communities; the demographic fluxes are estimated to continue in this fashion (Cohn and Caumont, 2016). In addition, less people are directly involved in production agriculture in high-income countries (Roser, 2018). However, human dependency on the industry

is sustained with one third of the world population relying on agriculture for their livelihood (Lambert Snodgrass et al., 2018). As such, current agricultural students must become more globalized themselves in order to successfully navigate across cultures both internationally and at home.

Increased diversity, including more ethnic minority and female involvement, can be seen throughout agricultural industries and agricultural education (Talbert and Edwin, 2007; Talbert and Edwin, 2008; USDA-NASS, 2012). In turn, U.S. land grant universities have increased efforts to recruit and retain underrepresented minorities in effort to build student populations that better reflect the communities the universities serve (USDA-NASS, 2012; Roberts et al., 2016). In addition to increased ethnic diversity, U.S. communities are also aging, with overall populations growing in numbers (Cohn and Caumont, 2016). As our communities continue to change, those wishing to make an impact in agricultural fields or careers, must learn to successfully communicate, operate, and thrive across multiple cultures.

Change always introduces uncertainty, but future industry leaders must possess the skills necessary to embrace these challenges in order to facilitate positive reactions to change. Intercultural competence is likely first among the skills necessary to navigate change in this context. While universities have traditionally prepared students with the technical knowledge needed in different agricultural fields, the university can also provide opportunities for students to improve in intercultural competence, allowing them to negotiate their technical skills with different audiences around the world and at home. In order to equip students with skills to be successful, deliberate program activities should be implemented in order to foster an understanding of and experience with navigating cultural differences. Study abroad is an

example of such a program. In turn, study abroad experiences are often promoted in educational settings as a means to develop intercultural competence (Bennett, 2010; Vande Berg and Paige, 2012).

Schmidt and Pardo (2017), through a longitudinal study of study abroad participants, found that experiences abroad did provide exposure to unfamiliar cultures and opportunities to develop language skills. Their study, however, concluded that while study abroad has some benefits, the experiences had no greater effect of developing human capital (i.e. skills, knowledge, and experience) than remaining at the local campus (Schmidt and Pardo, 2017). The immersion assumption highlights the gap between studying abroad and the production of students prepared to successfully function in a global society. While participation in study abroad has increased substantially among college-aged students, study abroad experience does not necessarily translate into the development of intercultural skills that most programs intend and claim to provide (Bennett, 2010; Hammer, 2012; Vande Berg et al., 2012).

Most coordinators of study abroad programs have developed an understanding that educational intervention and intentional support for students are a necessary to facilitate intercultural competence skill development (Vande Berg et al., 2012). Study abroad can provide students with an environment of unpredictability, which, in turn, provides educators with an opportunity to institute learning interventions, potentially enhancing the developmental progress of the students (Stuart, 2012). In practice, these interventions may include, but are not limited to, providing means to better engage with the host culture, allowing students to reflect on interactions and experience, and focusing on intercultural learning throughout the entire cycle of the study abroad program (Vande Berg and Paige, 2012).

Throughout U.S. universities, learning communities (LC) are often used as another method to better engage undergraduate students in their own learning (Lenning et al., 2013). LCs are used to organize and facilitate specific learning experiences and address university concerns related to student engagement by creating communities of individuals with like-minded academic interests (Jessup-Anger, 2015). The study abroad program described here developed a learning community in order to compliment the study abroad experience and to provide more structured and continual intercultural intervention. It was hypothesized that this structure would lead to quantifiable increases in intercultural competence.

This study abroad program was designed utilizing structure supported by intercultural and study abroad research to engaging agriculture students in intercultural competence development. The short-term study abroad program was completed and followed by a one-semester re-entry course located on the domestic campus. Throughout the program, students participated in reflections, simulations, and skill building exercises that have been successful in previous programs (Vande Berg et al., 2009; Jackson, 2015). Utilizing a domestic course following the international experience can help students to make meaning of and better understand their experiences, which are critical components in the successful process of intercultural competence development (Bathurst and Brack, 2012). Given the increase in undergraduate participation in study abroad programs, the opportunity exists to enhance development of the skills needed to navigate a multicultural workplace on top of development of these skills resulting from study abroad alone (Institute of International Education, 2017). There is limited research specifically focused on the development of intercultural competence among students in agriculture (Lambert Snodgrass et al., 2018). This study evaluates and analyzes

intercultural competence development in a group of agricultural students studying animal production in Italy.

5.2.1 Theoretical Framework

The theoretical framework utilized in designing this study is Hammer's (2015) Intercultural Development Continuum (IDC). The IDC is a model that describes how individuals operate while encountering cultural differences. It is a continuum that is separated into monocultural (i.e. using own cultural views as the basis for reality) and intercultural mindsets (i.e. using the context of other cultural lenses in order to make inferences of experience) (Bennett, 2004). It is from these mindsets that people view difference and interact with others. Each developmental stage is correlated with a quantitative score provided by the instrument used in congruence with the IDC, the Intercultural Development Inventory (IDI).

First recognized as the Developmental Model of Intercultural Sensitivity (DMIS), the IDC emerged with significant adjustments including changing the model from 6 stages to 5 and declaring that one stage is now to be seen as a transitional stage. The IDC's 5 stages are *denial, polarization, minimization, acceptance*, and *adaptation. Denial* and *polarization* fall within the monocultural mindset category while *minimization* is the transitional orientation to the intercultural mindsets including *acceptance* and *adaptation* (Hammer, 2012). However, the concept and key principles of the IDC remain true to the DMIS in its effort to conclude how individuals experience difference in varying cultural contexts (Hammer, 2015).

Throughout this research study, we utilized teaching methodologies to support students' progression along the IDC. The theoretical framework (IDC) was integrated into course design, assignment choice, and instrumentation chosen for analysis. The IDI was utilized to measure

how the implemented interventions influenced the stage development of participants. The IDC offers a lens through which to view and interpret participant IDI results.

5.2.2 Purpose and Objectives

The purpose of this study was to assess students' intercultural outcomes of an LC-based study abroad program. Specifically, we aimed to measure students' intercultural development over time, from before participating in the study abroad, immediately after, and through their completion of an allied 16-week course the following semester.

5.3 Materials and Methods

5.3.1 Course Information

The Purdue University Institutional Review Board approved all study experimental methods. The LC-based study abroad program focused on food animal production in Italy and was developed and delivered in the summer and fall semesters of 2018. Nineteen undergraduate students participated in the program. Student participation was restricted to first-year students (26.3% of total; n=5) and second-year students (73.7% of total; n=14) pursuing BS degrees in Animal Sciences or a related major. Students (n = 19) were 94.7% female, and 5.3% male. All students were U.S. citizens. Advertisement for the trip was provided in introductory courses across the department, study abroad fairs, Learning Community Websites (which are sent to all incoming students), and departmental welcome letters including the program advertisement flyers with flyer. Students were selected based on a GPA (undergraduate for current first-year or high school for incoming first-year) of 3.0 or higher and a first come, first serve basis.

The program consisted of two credit-bearing courses in succession and all students were required to enroll in both courses. In the first class (2 credit hours), students traveled throughout

Italy for 10 days in July 2018. Students completed the second course (1 credit hour), which took place on-campus in the fall semester immediately following the study abroad where students met once per week for 50 minutes for 16-weeks. While focusing on discipline content during class time and the study abroad trip, teaching methodologies were also implemented to engage students in intercultural competence development. The itinerary of activities during the study abroad portion of the program is provided in Table 5.1. Throughout the activities, students interacted with agricultural professionals to learn about different food production practices including dairy, Parma ham, and sheep production as well as varieties of cheese processing methods. In addition, students engaged in multiple cultural tours (e.g. exploring the history of Florence through a scavenger hunt and completing a historical walking tour in Bergamo) to learn the history of cities in which they visited.

Table 5.1. *Itinerary for Italy Study Abroad from July 21-July 31, 2018.*

Day	Activity
1	Depart U.S./Arrive in Milan Milan Cultural Immersion
2	Tour University Dairy Farm
3	Sheep Production in the Alps
4	AI center for Brown Swiss Verona Cultural Immersion
5	Parmigianno Reggiano Cheese Production and Dairy Farm Management
6	Parma Ham Production Balsamic Vinegar Production
7	Visit Sheep Farm
8	Florence Cultural Immersion

Table 5.1 continued

9	Venice Cultural Immersion
10	Depart/Arrive in U.S.

5.3.2 Course Assignments

Throughout the study abroad and on-campus portions of the course, students were required to complete all LC-related assignments. The LC portion of the course did not have an intercultural learning component, but was focused predominately on career opportunities and professional development. These assignments included attendance at LC sponsored extracurricular experiences, guest speaker presentations on career options and global agricultural topics, and community outreach events designed to focus on exposure to career opportunities (Table. 5.2). Students were also required to participate in service learning projects and collaborative learning with peers. Incorporating the LC aspect into this program allowed students to meet the larger university goal of having greater numbers of students participating in LCs. LC goals include broadening the student learning experience, becoming more involved in the local communities, and increasing likeliness of academic success (Learning Communities, University Residences, 2018). During the fall semester, students completed an outreach project that challenged them to create hands-on stations focused on animal agriculture using both international and home contexts. Students then engaged over 200 local elementary students with their hands-on stations during weeks 13 and 15 of the semester.

Table 5.2. *Semester Learning Activities and Assignments in an Animal Production Study Abroad/Learning Community Program.*

	Activity Title	Activity Focus	Week(s) of Semester
ICL Activities	Journal	Self-Awareness	SA*
	Name Game	Self-Awareness	SA*
	Who am I?	Self-Awareness	SA*
	IDI** Debrief/ IDP***	Self-Awareness	3
	Alpha/Beta Simulation	Awareness of Others	8
	Scenery, Machinery, People	Self-Awareness	10
	Market Visit	Awareness of Others	10
	Reflections	Self-Awareness/Awareness of Others	SA*, 9, 10, 15
LC Activities	Speaker from Duck Industry	Career Opportunity	2
	Guest Professor from Extension/Microbiology	Global Perspectives	5
	Speaker from Poultry Association	Career Opportunity/Global Perspectives	6
	Speaker from Swine Industry	Career Opportunity	9
	Guest Professor from Meat Science	Global Perspectives	11
	Speaker from Dairy Nutrition Company	Career Opportunity	14
	Community Outreach Project	Service Learning	13, 15

*SA: Study Abroad (10-day travel in Italy) portion of the program. **IDI: Intercultural Development Inventory (IDI, 2018). ***IDP: Intercultural Development Plan (IDI, 2018).

Students also engaged in intercultural learning (ICL) activities throughout the program (Table 5.2). These activities were designed to provide opportunities for students to reflect on cultural self-awareness and awareness of others. Stuart (2012) emphasizes the criticality of taking developmental stage into account while designing intercultural learning opportunities and developmental stages of students influenced the choice of our activities. One example, the 'Name Game' is appropriate for the intercultural development stages in which the majority of

participants fell prior to the study abroad (denial, polarization, and minimization) with the objective being for students to understand the importance of names in regards to identity and cultural variations in naming (Stringer and Cassiday, 2009).

Furthermore, examples of ICL activities included the following: Scenery, Machinery, People, the Asian Market Assignment, and Alpha/Beta Simulation. The activity "Scenery, Machinery, People" includes reading an anthropological article by Jones (2017), discussing how people interact with and view as different from themselves in everyday life, before having students reflect on and discuss with their peers about how they categorize others in their environment. The goal of this activity is for students' to become self-aware of the process of categorizing others, articulate how instinctually humans do this, and recognize the influence of empathy on relationship building. Reflective journaling was utilized to promote self-awareness by engaging students with specific prompts and providing an environment for students to process their experiences as supported by the literature (Bennett, 2010; Jackson, 2015; Vande Berg et al., 2009).

Additionally, students were prompted to complete the "Asian Market Assignment" in which they had to visit any Asian-centric markets, or other cultural market where they had never been, in the local community to purchase an item for a recipe of their choosing. This was designed to have students enter a culture-specific environment that required them to assess their cross-cultural skills and experience. Students were then required to respond to reflective questions including "how did you feel going to the market of your choosing?" and "what do you believe made you feel this way?" Lastly, the Alpha/Beta simulation divided students into two groups requiring them to follow specific guidelines on how to interact. Each groups' guidelines

simulated different communication styles as well as collectivist and individualist characteristics. The groups had to decide on how to allocate funds to members of an organizational team and then propose their decisions to the other team. When intermingling, teams were required to compromise. Students were allowed to discuss difficulties that arose as well as assess how they used their skills to compromise during the debriefing session. Intercultural learning activities used in this study can be accessed at the Intercultural Learning Hub (HUBICL and CILMAR, 2018).

5.3.3   Assessment of Program

Students' intercultural development was measured over time using the Intercultural Development Inventory (IDI) to determine where both individuals and groups were placed on the Intercultural Development Continuum (IDC). The IDI is a 50-item inventory and is widely used in cross-cultural assessment and program evaluation (IDI, 2018). The quantified results of the IDI are a measure of intercultural sensitivity and are reported as numbers indicating an individual or group's Perceived Orientation (PO), Developmental Orientation (DO), and Orientation Gap (OG). DO signifies the objective stage from which the participant operates when encountering cultural difference while the PO is the subjective view, or stage from which the participant believes they navigate cultural difference. The PO and DO are associated with one of the 5 developmental stages on the IDC, *denial (55-70), polarization (70-85), minimization (85-115), acceptance (115-130), and adaptation (130-145),* while the OG represents the difference between the PO and DO. Researchers from this study report all PO, DO, and OG results as well as statistical findings. Furthermore, variations are provided on individual participant DOs in exploration of this objective view of the stage from which students operate when encountering cultural differences.

Students completed the IDI online at three different times in the program: one-week prior to international travel (T1), week 1 of the Fall semester (T2; 1 week after completing international travel), and week 15 of the companion course in the Fall semester (T3). Three time points were selected in order to distinguish movement on the IDC (whether forward or backward) based solely on international travel versus movement that could occur (increase/decrease) during the on-campus course.

5.3.4 Statistical Analysis

Paired sample t-tests were carried out on the IDI results of all students to identify presence of statistically significant differences in responses (SPSS Statistical Version 25). However, IDI (2018) indicates an individual change of 7 points or more is meaningful. Analysis was performed upon the DO, PO, and OG from T1/T2 and T1/T3. T-tests were not completed on T2/T3 in order to refrain from compromising statistical validity (i.e. decreasing risk of type 1 error by not performing multiple comparisons of means tests on overlapping data). T2 remained a placeholder to identify any significant change from pre- to post-travel (i.e. T1/T2). Effect size was also evaluated for student IDI assessments. Differences were considered statistically significant at $p < .05$.

5.4 Results

5.4.1 Individual Developmental Orientation

Individual development is important because assessing individual learners informs educators about how to effectively engage students in course content for by understanding where the learners are when they arrive in our classrooms (Wandschneider et al., 2015). There were three time point results for each of the quantitative outcomes of the IDI for the group (Table 5.3).

Of the 19 student participants, 42.1% (n = 8) progressed meaningfully (i.e., moved forward 7 or more points) in their DO from T1 to T3, while 10.5% (n = 2) decreased meaningfully, and 47.4% (n = 9) remained neutral. Five students' DO (26.3%) moved (progressed or regressed) from T1 to T2 by 7 points or more, while the rest of the program participants' DO did not change. Three of the eight students that progressed between T1 and T3 progressed over 14 points, twice the amount identified as meaningful by IDI (2018). Of the participants, 26.3% (n=5) transitioned forward into a new stage on the IDC between T1 and T3.

Table 5.3. *Intercultural Development Inventory results of the Perceived Orientation, Developmental Orientation, and Orientation Gap from 19 undergraduate student participants in a short-term study abroad program.*

	T1	T2	T3
PO	117.75	117.61	119.79
DO	83.55	83.04	87.74
OG	34.20	34.57	32.05

The developmental stages of individual participants changed from T1 to T3 (Table 5.4). The number of students in the *denial* stage increased (n=1 at T1 to n=2 at T3) with the regression of one student from *polarization*. The number of students in the *polarization stage* decreased over the course of the program (n=1 at T1 to n=9 at T2). The number of students in the *acceptance* stage increased (n=0 at T1 to n=2 at T3) with two students progressing from *minimization* (from zero students prior to study abroad). The students within *minimization* decreased throughout the program (n=8 at T1 to n=6 at T3). No students began in, nor progressed to, the *adaptation* stage on the IDC. Lastly, the effect size calculated for this evaluation of developmental orientations (DO) was a Cohen's d = 0.27. This is considered a small effect size (Walker, 2008).

Table 5.4. *Percentages of the 19-student group composing each developmental stage on the Intercultural Development Continuum from pre (T1) to post (T3) study abroad program.*

Stage	T1 (%)	n	T3 (%)	n
Denial	5	1	11	2
Polarization	53	10	47	9
Minimization	42	8	32	6
Acceptance	0	0	11	2
Adaptation	0	0	0	0

5.4.2 Group Developmental Orientation

While it is important to report and evaluate individual development, overall progression on the IDC as a group was limited and there were no statistically significant changes. Little variation was observed in the group perceived orientations (PO) between T1 to T2 (117.75 vs. 117.61) and T1 to T3 (117.75 vs. 119.79), and the group PO remained in the *acceptance* stage at all three time points. There were no statistically significant differences between group PO between T1/T2 and T1/T3. Similarly, group developmental orientation (DO) was not significantly different across the three time points (83.6, 83.0, and 87.7 at T1, T2, and T3, respectively). The group remained in *polarization* from T1 to T2, while crossing the 85-point threshold to low *minimization* at T3. The orientation gap (OG) also showed little variation across the three time points, and no significant differences were detected between T1/T2 and T1/T3.

5.5 Discussion

As a group, the participants in this study were primarily categorized in the monocultural mindset of *polarization* from T1 (53%), T2 (42%), and T3 (47%) and secondarily categorized in the transitional stage of *minimization* from T1 (42%), T2 (37%), and T3 (32%). The results of this study are similar to others, supporting the premise that undergraduates, on average, approach cultural differences from the developmental stages of *minimization* or *polarization* (Sandell and

Tupy, 2015; Anderson et al., 2006; Terzuolo, 2018). In this mindset, differences are viewed as "us versus them", and encounters with difference may still be uncomfortable (Bennett, 2004; Hammer, 2012). Hammer (2013) suggests that individuals in this category see cultural differences as an obstacle and exhibit behaviors such as placing themselves in a superior light in comparison to others and using polarizing language. One example of this type of response to difference in our study was seen in a participant's response to the [Asian] "Market Assignment" noting they "…felt out of place due to being one of the few there not of an Asian background. The fact that I couldn't understand many of the food items, or even read them, was also something that made me feel a tad uncomfortable."

A large percentage (T1 = 42%, T3 = 32%) of students were in the transitional *minimization* stage. The Georgetown Consortium, which includes 61 programs with 1297 student participants, is the largest study of cultural immersion (study abroad) and their outcomes relative to intercultural competence of undergraduates (Vande Berg et al., 2009; Vande Berg and Paige, 2012). They reported that their student average was in the *minimization* stage. This stage is identified by emphasizing common cultural practices and values as a way to interact with people from different backgrounds, which can minimize cultural differences (Bennett, 2004; Hammer 2012). In response to the "Market Assignment", another student used minimizing language saying, "I feel like visiting this [Asian] market was like visiting any place in Italy." This generalization can have unintended outcomes. While students may feel successful navigating differences, bridging cultural gaps by solely focusing on common ground can dismiss the importance of diversity and influence of difference on cultural identity, and indicates the students may view their own perspectives and values are absolute (Bennett, 2004; Hammer, 2012; Hammer, 2013)

On the other hand, participants who progressed to *acceptance* from T1 to T3 (11%) are believed to have developed the skills needed to appreciate and emphasize understanding of diversity and cultural complexity (Paige et al., 2003; Hammer, 2012). The skills needed to understand different perspectives are important in creating solutions cross-culturally for issues in agriculture such as sustainable food production (Lambert Snodgrass et al., 2018). In relation to group PO, the students in our program believed they operated from the stage of *acceptance,* while mostly operating from a stage of *polarization*, which suggests an overestimation of intercultural communication skills. Disparity between PO than DO (i.e. large orientation gaps) is common across IDI research (Altshuler et al., 2003; Pedersen, 2010; Karcher et al., 2013; Jackson, 2015; Lambert Snodgrass, 2018). There are implications of overestimation of intercultural competence, however, including potential disregard of global and domestic diversity issues as well as the limitation it places on students' ability to effectively learn and retain knowledge (Dunlosky and Rawson, 2012; Hammer, 2013). When there is belief one is already at a progressive stage developmentally, even if it is not necessarily the case, there is little reason to engage in or seek opportunities to increase skills to get to the next level.

Limitations of short-term study abroad programs (defined here as anything less than a semester-long) in comparison to longer term programs include: restricted time to incorporate cultural-related activities, minimal opportunities or time to cultivate cultural learning, limited immersion and time in the local community to develop cross-cultural communication skills, and a student experience that is largely controlled by faculty (Mapp, 2012; Cubillos and Ilvento, 2018). The duration of the study abroad program is often believed to influence intercultural competence development; however, this influence may not be absolute. Czerwionka et al. (2015) showed that U.S. students' intercultural development increased through their participation in a

short-term study abroad program to Spain, while Anderson et al. (2006) found no significant increase in intercultural development in US students who participated in a short term program to England and Ireland. Though movement occurred on the IDC, there was no change of developmental stages (Anderson et al., 2006). Cultural visits, speakers, and home-stays were implemented throughout Anderson et al.'s (2006) program. Fabregas-Janeiro et al. (2011) observed that their short-term study abroad participants (n=99) displayed no difference in intercultural development on the IDI in comparison to their counterparts participating in the on-campus intercultural program and control group. While there was specific discussion about interaction with other cultures throughout the five programs they evaluated, Fabregas-Janeiro et al. (2011) did not provide examples of specific intercultural learning activities. The authors concluded that future programs should incorporate deliberate methods to engage students in cultural learning similar to those used in the present study (e.g. role-playing, journaling, reflective essays, and cultural visits).

Terzuolo (2018) found that a group of 108 students independently (i.e. not faculty led or cohort based) studying for a semester abroad (i.e. long-term) showed statistically significant progression in intercultural competence development on the IDI. Students in these programs were not required to complete specific activities or assignments. Program duration impacts student development, indicating that long-term programs might be more likely to increase intercultural competence and global-mindedness (Kehl and Morris, 2008; Vande Berg et al., 2009).

These findings suggest that program duration could be a factor in growth patterns among students in our program. Bathurst and Brack (2012) suggest that a follow-up course can be used and should be designed to engage students in processing their international experiences and

stimulating development. Our program incorporated a semester-long course following the 10-day study abroad. There was a larger increase in group stage development from T1 (DO=83.55, *polarization*) to T3 (DO=87.74, *minimization*) than T1 (DO=83.55, *polarization*) to T2 (DO=83.04, *polarization*) and individual stage movement from T1 to T2 (26.32%) and T1 to T3 (42.11%). This increased variation was expected with the incorporation of such a follow up course. However, though there were individual differences, no statistical difference was indicated by group results, indicating that the intercultural interventions did not facilitate progress.

Rust et al. (2013) emphasized the importance of and support for the use of intercultural coursework to facilitate learning. Activities utilized in the on-campus portion of the Italy semester course were selected to engage students in self-reflection and cultural experiences according to intercultural development studies and group IDI results. Again, at a group level, this was not the outcome for this program. Passarelli and Kolb (2012), who suggest providing activities and assignments founded in experiential learning as a means to engage students in the process of developing intercultural competence, support the activities we chose. The visits (e.g. Market Visit) and simulations (e.g. Alpha/Beta) provided the concrete experience that students were then required to reflect on, conceptualize in class discussion using the Thiagi (2015) debriefing method, and experiment with the next cultural activity. Literature suggests that when there are intercultural learning objectives, it is critical to structure study abroad programs in a way that provides clear opportunities for student intercultural development throughout program participation in programs (Hammer, 2012; Goldoni, 2015).

Due to the nature of the course (i.e. the study abroad took place before the semester course, meaning that students met at the airport or in-country), there was a lack of contact

between students and program leaders prior to the international experience. The minimal contact before the start of the program limited the ability of leaders to prepare students prior to the international component. Preparing students for international experiences has been identified as beneficial (Engle and Engle, 2012), indicating this lack of preparation may have contributed to the limited overall group movement on the IDI. The intermediate group results of the IDI (T2) did not show a difference in DO from the beginning to the end of the international component (T1), despite deliberate activities during the international experience designed to develop intercultural competence. The result of a higher increase in DO from T1 to T3 was not statistically significant, resulting in a lack of support on the emphasis provided in the follow up course to engage students in developing their skills and process their study abroad experience as suggested by Bathurst and Brack (2012). Without having the aforementioned benefits possible of long-term study abroad programs, which afford students a greater opportunity to develop stronger relationships cross-culturally (Kehl and Morris, 2008), a post-class can be a space in which students can better develop understanding of their intercultural experiences through activities designed to stimulate learning. The additional support of the on-campus semester portion of the program may have contributed to individual movement from T1 to T3 (42.11%) on the IDC. Similarly, Pedersen (2010), who administered post-IDI one month after study abroad return, reported that students need sufficient time to process and grow from their international experiences. Our delayed administration of the IDI, at T3 did not identify the further group progression we hypothesized.

Of the 19 program participants, the DO of 2 students regressed on the IDC. While this is a small percentage of the group (10.5%), there are several explanations for why this phenomenon may have occurred. The international experience has the potential to induce instability for

students due to the drastic change in their environment (Stuart, 2012). While intercultural learning activities were implemented to support students in developmental progression during this period of change, each student is unique and experiences study abroad based on their individual cognitive, emotional, and behavioral factors (Lee and Negrelli, 2018). Our class was composed of incoming and current first-year undergraduates. Students in this stage of their undergraduate careers are often forced to become more self-reliant due to their transitioning to greater independence away from home, even before entering the college environment. This is a critical time for support in order to be successful in this transition, however this is in addition to support needed in facing cultural challenges during the study abroad program (Stuart, 2012). Providing sufficient support and stimulating engagement through challenges are key components to adjustment and development from study abroad, and it is important to provide supportive and safe areas in which to engage students in the process (Bennett, 2010). Our course was designed to provide that space through a semester long course where students completed intercultural assignments and activities in order to continue learning from their international experience; however, results did not support the overall group growth that was expected with the intercultural learning interventions.

In addition to the factors already discussed, the international location of a program potentially influences student intercultural development. Traveling to a country with vastly different values, norms, and identities compared with those of program participants, can result in increased cognitive dissonance, a trait important for growth (Lee and Negrelli, 2018). During the 2016-2017 academic school year, Italy was the second (behind the United Kingdom) most visited study abroad destination by U.S. participants (Institute of International Education, 2018). This destination kept our students, who all identify as U.S. citizens, within a Western culture and

developed country. Developing countries may have a much greater effect with respect to facilitating growth in cognitive development and engagement (Horn and Fry, 2013). Students from developed countries traveling to developing countries gain more international perspective and cognitive and personal growth compared with peers electing to participate in programs in developed countries (Thompson et al., 2000). U.S. students also tend to select destinations where they can still function by only speaking English (Thompson et al., 2000). The exact relationship between study abroad destination and intercultural competence development needs to be further explored. European destinations are the most popular for U.S. students, but developing destinations provide different perspectives from which to teach and learn and can influence intercultural development (Tarrant et al., 2011).

5.6   Summary

This innovative program combined a short-term international experience with a semester long learning community course. Although a large percentage of individual students moved on the IDC, group DO did not change throughout the course of the program. One limitation to this study is the small sample size and caution must be taken when extrapolating these results to larger student populations. However, 42.1% of program participants progressed meaningfully on the IDC. Opportunity exists in short-term study abroad programs to develop undergraduate student intercultural competence, a skill that is required for students planning careers in an agricultural related field. Future research is needed to better determine the types of support that could be provided to student prior to the international experience to enhance learning during their international experience and how the learning community component of the course can be best utilized to enhance intercultural development following the international experience.

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CHAPTER 6.   CONCLUSIONS

Undergraduate students' engagement in intercultural learning activities before, during, and after participation in a study abroad program may result in increased intercultural competence. College of Agriculture undergraduates are in need of intercultural competence development due to continued societal and environmental changes. These changes impact agriculture broadly including production practices, consumer demand, community demographics, employee demographics, and employment opportunities. In turn, agricultural stewards, as Extension Educators are to local communities, must effectively communicate across different cultures. This thesis describes separate studies designed to collect initial data assessing changes in intercultural competence among these two distinct groups, undergraduate students and Extension Educators, using two empirically validated tools, the IDI and the BEVI.

In the first study (Chapter 2), a cohort of 11 students spent a 16-week semester learning about food security and environmental challenges in Vietnam. The cohort completed intercultural learning activities, traveled to Vietnam during week 10, and completed deliberate reflective assignments throughout the program. As a group, students enrolled in this program progressed their Developmental Orientations by over 13-points on the IDI. This progression is one of the most impressive reported gains on the IDI documented from a short-term study abroad program; previous notable gains were 12.47 points reported in 2003, 11.97 reported in 2008, and 13.43 reported in 2011 from the AUCP program (Paige and Vande Berg, 2012).

Chapter 3 analyzes the BEVI results from the same student cohort from Chapter 2. This tool provides a holistic view of the composition of beliefs and values within the participant population. The BEVI allows for program coordinators to assess student preparedness in anticipation of studying abroad and tailor formative assessment to meet the learning needs of

individual students. Results from this study indicated that there were no gains on scales related to course learning outcomes but that there were unintended changes in other dimensions of the beliefs and values systems of our participants. Student participants (n=11) remained high in Sociocultural Openness (86 to 83), or openness to difference, and Ecological Resonance (80 to 77), investment in environmental issues, throughout the program. In contrast, students regressed in Socioemotional Convergence (82 to 65), a critical thinking scale, indicating overstimulation. Additionally, breakdown into subgroups of ethnicity and gender highlight variations that indicate further affective support is necessary between students. Analyses beyond group averages, using the BEVI decile report, provided insight that students responded to encounters with difference and engagement with intercultural learning techniques throughout the semester differently. In summary, program administrators must understand their student participants in order to facilitate an effective educational program that is conducive for cognitive and affective development. This requires implementation and use of formative and summative assessments, such as the BEVI, in assessing student preparedness for study abroad.

Chapter 4 presents Extension Educator (n=5) IDI data and describes mentorship benefits from their participation in the Vietnam embedded study abroad program. Developmental Orientations of Educator participants decreased an average of 8 points, with only two of the five Educators moving meaningfully over the course of the semester. Through analysis of qualitative and quantitative data collected, the researchers concluded that Educators benefited from the mentor relationship with undergraduate students in the course. Educators self-reported meeting goals set and finding value in participating in a university study abroad program. A limitation that should be addressed in future studies is that educators were not supported to the extent of

student participants in intercultural development nor required to engage as much in intercultural learning activities.

Lastly, Chapter 5 assesses a combined learning community/study abroad program that was restricted to first-year and incoming students. Program participants (n=19) studied food production in Italy. A notable difference between this program and Vietnam was the lack of support given to participants before the international experience. As a group, the student cohorts' DO increased by 4.1 points. Though this is not a statistically significant, nor a meaningful gain according to IDI, assessment of individual movement indicated that 42% of students moved meaningfully (i.e. more than 7 points) on the Intercultural Development Continuum. The design of the program limited opportunity to prepare students before the cultural immersion in Italy. Additionally, the learning community extracurricular activities and guest speakers did not incorporate intercultural learning but focused on professional development. These components of the course inhibited meaningful group movement on the Intercultural Development Continuum.

In summary, the two innovative programs presented in this thesis offer initial information to further understand the intercultural competence development in short-term study abroad programs. There were significant IDI gains in study 1 but limited, and even lack of, growth in both the Educators and students participating in the Italy course. Destination, support provided, intercultural activities, and duration may influence outcomes produced in this thesis. BEVI results and analysis provide a representation of student spread among participant populations in their beliefs and values. Beliefs and values influence student experience. Understanding study abroad participants within the group you are serving is critical to designing effective programming by taking their individual needs into consideration. Future studies should

incorporate the IDC into course design in addition to embedding specific intercultural learning activities before, during, and after studying abroad.

6.1 References

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