Exploring How Critical Reflection can be Used in a Short-Term Study Abroad Experience to Elicit Cultural Awareness and Technical Knowledge of Agriculture Students

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Abstract

College graduates should be ready to function in a complex global environment, working within and across cultures to achieve organizational goals. Study abroad courses focused in agriculture provide a platform to examine the complex relationships between people (social science) and agriculture (natural sciences). The purpose of this study was to explore how critical reflection can be used in a short-term study abroad program to elicit both cultural awareness and technical knowledge of agriculture students. Students engaged in daily journaling to elicit reflections on their observations about technical subjects and Belizean culture. Through this process, students showed cultural awareness and technical understanding of agricultural issues in Belize. The results support the use of critical reflection journals as an important instructional strategy for study abroad courses.

Introduction

Universities have embraced the importance of international learning opportunities for students, including courses with an international focus, international internships, guest lectures by international experts, and study abroad programs (Bunch et al., 2013). The immersion potential of study abroad programs is often lauded as a great opportunity for learning about other cultures (Harder et al., 2015). Study abroad programs can vary in length from as short as a week to an entire semester. Although longer experiences may give students greater opportunities for learning and growth, carefully designing the learning experiences in a short-term study abroad program can create an impactful experiential learning experience for students (Ritz, 2011). A key feature for the pedagogy of short-term study abroad programs happens through reflection (Kolb, 1984; Roberts, 2006). Perry et al. (2012) concluded short-term study abroad programs can yield transformation learning for students when critical reflection is intentionally implemented. However, this critical reflection may not happen without deliberate planning by the instructor.

Reflective journaling has been frequently documented as a tool for reflection on study abroad programs (Lamm et al., 2011; Northfell and Edgar, 2014; Sankey Rice et al., 2014). Students enjoy reflecting on their experiences while on a study abroad (Lamm et al., 2011), but found reflective journaling difficult without guidelines from the professor (Harri-Augstein and Thomas, 1991). Two specific recommendations to professors were to require daily reflections (Northfell and Edgar, 2014) and to provide students with multiple methods to reflect (Lamm et al., 2011).

A study abroad focused in agriculture provides a platform to examine the complex relationships between people (social science) and agriculture (natural sciences). However, implementing an educational experience focusing on both may be challenging. The purpose of this study was to explore how critical reflection can be used in a short-term study abroad program to elicit both cultural awareness and technical knowledge of agriculture students. As a science-based study abroad program, lessons learned here can greatly contribute to our understanding of these kinds of programs and serve to guide future study abroad programs.

Literature Review

The implementation of this study was guided by the Conceptual Framework for Studying Globally Integrated Education Activities proposed by Roberts et al. (2013). This model is based on an experiential learning approach (Figure 1; Kolb, 1984; Roberts, 2006). The model begins with recognizing that all learners enter the globally integrated learning activity with prior experiences and
Exploring How Critical Reflection

attributes. The center of the model depicts the triadic outcomes for global education activities of technical competence, intercultural competence, and critical thinking. Expression of these outcomes may be changes in knowledge, attitudes, skills, or aspirations. This particular study focused on how using a reflection technique (Perry et al., 2012; Roberts, 2006) impacted technical and cultural outcomes (Roberts et al., 2013). The remainder of this article focuses on these specific aspects of the model.

Cultural Awareness

According to Deardorff (2004), intercultural competence is defined as a person’s ability to act and communicate appropriately in different cultural contexts. Cultural awareness is a precursor for intercultural competence (Deardorff, 2011). Intentional and structured critical reflection is a component of direct evidence for promoting cultural awareness and the development of participants’ intercultural competence (Deardorff, 2011).

“Culture” is a complex term with many different definitions. For purposes of this study the definition proposed by Delaney (2011) was used: “the signifying, symbolic, or meaning systems” (p. 13) used by a group of people. Delaney also proposed an eight-dimension framework for examining culture: space; time; language; relatives and relations; our bodies; food; clothing; and important people, places, and performances (Delaney, 2011). Professors leading study abroad programs can use these eight dimensions when planning their activities to give students intentional opportunities to reflect on the local culture.

Technical Competence

Technical competence is the foundation of most college degree programs, especially in the sciences and engineering. DeWinter (1997) argued professionals need to be able to collaborate with their technical peers around the world and study abroad programs provide a great mechanism to begin learning how to collaborate. In a study of engineering and science students, DiBiaso and Mello (2004) found off-campus experiences like study abroad programs provide a great context for learning to apply technical content to solve ill-defined problems. Dwyer and Peters (2004) found participants’ personal development, academic commitment, intercultural development, and career development skills were all enhanced through their participation in study abroad experiences. In a more recent study, Kronholz and Osborn (2016) found a study abroad experience can impact vocational identity and career decision-making of participants. The course used for this study abroad was focused on exploring agricultural issues. Given this focus, students were expected to gain a more informed attitudes about agricultural issues in Belize and compare those issues to the current status in the United States.

Methods

In the spring of 2015 a team of three University of Florida faculty led a 10-day study abroad to Belize focused on exploring agricultural issues. This experience was based on a three-credit undergraduate class on agricultural issues. One faculty had previous experience in Belize and was responsible for planning the trip. Another faculty taught the on-campus version of the course and assumed responsibility for the academic portions of the study abroad. The third faculty had future interest in leading the study abroad and participated to learn more about the program.

A total of eight students (n=8) participated in the study abroad program. Participants included five students from Agricultural Education and Communication (one male, four females; all white, ages 18-22), two students from Plant Science (one white male, age 23; one white female, age 62), and one student from Microbiology (multicultural – Hispanic/Pakistani female, age 25).

As a part of the course, students met with the faculty three times prior to the international experience. The purpose of these meetings was twofold: to discuss trip logistics for student understanding and awareness and to begin exploring the culture and agriculture in Belize. As a pre-trip assignment, students worked in pairs to identify and explore an agricultural issue in Belize and then presented their findings to the rest of the group at one of the pre-trip meetings. Students also identified an agricultural issue they would individually explore further while in Belize. Each issue was approved by the instructors.

The study abroad experience occurred in two locations in Belize: one in the inland Cayo District and the other in the Toledo District, near the coast. Daily activities included visiting farms, farmers’ markets, and cultural sites. The goal was to provide students with opportunities to interact with as many Belizean people as possible while learning about the agricultural issue they selected. Each evening consisted of a group debriefing session, followed by individual time for student journaling. Students were given a set of prompts to guide their reflective journaling and were asked to collect photos of their experience for a blog.
Three post-trip sessions were held with students in the weeks following the trip. Faculty worked with students to finalize their research on the agricultural issue during these sessions. The final session consisted of students presenting what they learned about their issue and showcasing their blog.

Data Collection

All activities conducted in this research were approved by the University of Florida Institutional Review Board. Data used to achieve the purpose of this research was obtained from the student daily journal entries while on the study abroad and a summative journal entry completed after the study abroad trip. All journal prompts were developed based on the framework outlined by Roberts et al. (2013). The daily (D) journal prompts were:

- D1: What were your observations about the culture today?
- D2: Did your perceptions change today? How?
- D3: Which activity from today had the greatest significance to you? Why?
- D4: What did you learn today? How will it affect you professionally?
- D5: What did you see or learn today that challenged or changed your previous thinking? Why did it challenge or change your thinking?
- D6: What do you hope to learn tomorrow?

The summative (S) journal prompts were:

- S1: Overall, what were your observations about the culture?
- S2: Did your perceptions change over the course of the study abroad experience in Belize?
- S3: Which activity had the greatest significance to you? Why?
- S4: What did you learn from the study abroad experience? How will it affect you professionally?
- S5: What did you see or learn from the study abroad experience that challenged or changed your previous thinking? Why did it challenge or change your thinking?
- S6: How does the issue you selected to research in Belize compare or contrast with that issue in the home state?

Prompts D1 and S1 were specifically designed to elicit reflection on intercultural competence. Prompts D4 and S4 were specifically focused on technical competence. Prompts D2, D3, S2, and S3 allowed students to discuss either cultural or technical activities. Prompts D5, S5, and S6 were designed to stimulate critical thinking, while prompt D6 was designed help prepare students for the next day’s activities. This article reports the results from the intercultural competence and technical competence analysis. A companion article (Roberts et al., in press) focused on the critical thinking analysis.

Data Analysis

Students submitted their journals electronically to the researchers. Individual files were merged to create a single file per participant. Identifiable information was removed from the journals and each student was assigned a number (P1 to P8). Line numbers were added to the file to allow referencing a specific quote or important information. The initial analysis was conducted by one of the researchers who attended the study abroad. Results were verified by the other two researchers who attended the study abroad to establish trustworthiness in the data (Lincoln and Guba, 1985).

A basic thematic analysis was used to analyze data (Boyatzis, 1998). Coding for cultural awareness began with using the existing elements of culture (Delaney, 2011) as primary themes and then used emergent coding to identify sub-themes within each primary theme (Boyatzis, 1998). The elements of culture are (a) space; (b) time; (c) language; (d) relatives and relations; (e) our bodies; (f) food; (g) clothing; and (h) important people, places, and performances. Coding for technical knowledge used emergent themes, based on the data in the journals. Representative quotes from student journals are used to provide more context to the themes.

Results

The student journals demonstrated varying degrees of effectiveness in eliciting critical reflection about intercultural competence and technical competence. The results are organized to provide examples of the extent to which students reflected upon the elements of culture and technical knowledge.

Cultural Awareness

Space. Seven of the eight (87.5%) participants (P1, P2, P3, P4, P5, P6, P7) made observations about the ways Belizeans spatially organized their environment and participants demonstrated different levels of critical thinking. Participants wrote about the topics such as the layout of the airport, types of housing, physical layout of communities, and the diverse environmental landscapes. Some participants made judgment statements about the housing with students implying negative perceptions about “run-down houses” (P1), the absence of fancy homes (P2), or the “primitive” living conditions (P2). Other students admired what they saw referencing the interesting architecture (P3), marveling at the diversity in size and age of the houses (P6), or making a general statement about the beauty of the houses (P6). Four participants (P2, P3, P4, P6) drew specific comparisons between the progressive Mennonite community of Spanish Lookout and the other communities visited during the study abroad program. P2 called it a “country within a country.” P3 believed it was better organized than other Belizean villages, and P6 commented that it had a better-developed infrastructure. The journals demonstrated strong potential as a tool for study abroad participants to critically reflect about space as an element of culture.
Exploring How Critical Reflection

Time. Only one participant (12.5%) referenced time (P8). P8 compared the Belizean “relaxed” pace of life to a more hectic pace in the U.S. P8 also noted the way Belizean people seemed comfortable waiting in line, whereas Americans seemed to get impatient. The activities and interactions in this study abroad program did not appear to elicit critical reflection about time.

Language. Three participants (37.5%) observed aspects about the languages used in Belize (P3, P5, P6). Those who reflected upon language noted the variety of languages spoken. A few participants seemed surprised about the prevalence of English although the languages and cultures of Belize were discussed prior to the trip. Participants recognized English was the official language of the country, but still seemed “amazed” to the trip. Participants recognized English was the official language of the country, but still seemed “amazed” at how well the Belizeans speak English” (P6). The journals provided these participants a safe space to reflect upon their preconceived notions and reconcile those with their actual experience.

Relatives and relations. The cultural element of relatives and relations was a recurring theme in the reflections. All participants made observations about how Belizeans relate to others. Some common descriptors were “friendly” (P2, P3, P4), “sweet” (P3), “caring” (P3), and “laid back” (P6, P7); these types of characterizations lead P8 to conclude Belize is very communal with neighbors helping neighbors. Most participants also made observations about families and marriage, cultural diversity, and gender roles in Belize. Gender roles were prominently evident in participant learning. Many participant observations focused on what they saw men and women doing, such as women working at home crafting (P2, P4, P6), women carrying children and heavy baskets (P4); women gathering fruits and berries (P4), women cooking (P4), farmers’ wives selling produce at the markets (P3), and men working to provide for the family (P6). P3 concluded women in agriculture do not have the same status as men, noting men grow the food and women sit at the markets to sell the food. Students demonstrated their ability to reflect upon their observations and draw generalized conclusions about relatives and relations in Belize.

Our bodies. Physical appearance was noted by only three participants (37.5%), indicating most participants did not use their journals to critically reflect upon the cultural element of our bodies. P5 noted there is no “stereotypical Belizean ‘look’” with great variance in physical appearance, including skin color. The only other physical characteristic referenced was related to eyes. P1 and P6 observed very few Belizeans wearing eyeglasses.

Food for thought. Three-fourths (75%) of the participants referenced the food they ate while in Belize. The study abroad experience had two intentional cultural meals, one depicted by the tour guide as a typical Mestizo meal, and the other as a part of the visit to the living Maya experience. Participants likely reflected upon food as a result of those experiences; they enjoyed the typical Mestizo meal and noted the wide variety of foods (P4, P5, P6, P7) served family style (P6). Participants had the opportunity to visit and view several markets and they reflected differently upon those shared experiences. P2 was particularly impressed with the markets and noted the wide variety of fresh fruits and vegetables, but P4 was surprised by the open-air meat markets without refrigeration. P4 concluded foods in Belize are not up to U.S. standards. One participant demonstrated an ability to reflect upon food at the system level, noting the presence of hunger, despite sufficient amounts of land available for production and plenty of food available.

Clothing matters. Many participants (75%) made observations about the clothing Belizeans wore. P2 noted the wide variety of types of clothing. Participants observed regional differences in clothing with the inland people being more “American” in their dress (P3, P6) and coastal areas being more colorful (P3) and more like what they interpreted as traditional Mayan (P6, P7). P6 concluded that, in general, Belizeans dress conservatively (not revealing). There were specific observations, such as seeing farm workers in their work clothes (P2). The trip to Belize occurred during a political campaign, and participants referenced the colored t-shirts worn by many people to express their political beliefs (P1, P4). The journal data revealed that participants frequently reflected upon clothing as a cultural element despite it not being the focus of the study abroad.

Important people, places, and performances. All participants mentioned important people, places, and performances. Participants reported Belizeans are very proud of their traditions and heritage (P1, P2, P3, P5), specifically mentioning their Mayan heritage (P2, P4, P5, P7, P8). In general, participants reported the importance of traditional values (P1, P2, P3, P5) and “traditional ways of life” (P1). Another common theme from participants was Belizeans’ connection to their natural environment (P4, P5, P7). These observations spanned the two geographical locations that were visited, with people being connected to the land (P2, P4, P8) and people being connected to the sea (P4, P5, P7, P8). A prominent expression of Belizean peoples’ connection to the environment was the widespread usage and knowledge of medicinal plants (P2, P7, P8). The types of comments made by the participants suggest their views of Belizeans were a direct result of the types of experiences embedded in the study abroad; participants did not question the authenticity of those experiences and whether or not the people with whom they interacted were representative of the broader Belizean population.
Technical Knowledge
Participants actively reflected upon technical knowledge in their journals, with those reflections representing natural and social science interests.

Food Production. All our participants mentioned food production, expressing an increase in their own awareness of agricultural production and production systems in Belize. Agricultural diversity in Belize, including regional differences in agriculture (P7, P8) and the ability to farm all types of ecosystems (P7), were reflected upon.

Organic Production. Farming practices and techniques were of interest to participants. One particular agricultural production system of interest to many participants was organic farming (P3, P4, P5, P6, P7, P8). Participants noted organic farming practices in Belize differ from those in the U.S. (P3, P6, P7) and observed traditional farmers using some organic practices to cut costs (P6, P7). Participants concluded organic farming is not a fad in Belize [comparing to U.S.] – it is a way to produce safe food (P3), and a true dedication to organic methods by farmers (P5) because they want to do the right thing (P8). Other production practices reflected upon included planting patterns (P6), the contrast between U.S. mono-cropping systems and Belizean multi-cropping systems (P4), agroforestry practices (P8), and alternative production systems (P1).

Marketing. Most (75%) of the participants reported learning more about food marketing. Participants reported an understanding of the food system in Belize post-harvest (P1, P4) and an overall awareness of the number of markets and grocery stores (P1, P2). Participants also shared thoughts on the types of food marketing systems. P3 was impressed with the integrated farms we saw that produce, process, and sell their own products. P6 was interested in the cacao cooperatives that market products from many cacao farmers. P4 noted the University of Belize’s agriculture department has added marketing to the curriculum to help future farmers better sell their products for the greatest profit.

Medicinal plants. Half (50%) of the participants wrote about medicinal plants. We visited several medical plant gardens while in Belize, which became of great interest to some of the participants. Participants were amazed by the number of plants with medicinal uses (P4, P6, P7). Participants were also interested in the connection of Mayan culture to medicinal plants (P2, P7) and the knowledge of local people about the plants (P7). P4 and P6 said this trip changed their perspectives on medicine and P2 had a desire to learn more about medicinal plants. In this regard, the critical reflections journals captured evidence of significant change in the participants.

Agricultural education. All but one participant (87.5%) reflected on agricultural education in Belize, which may be a function of the course having been taught by faculty within an agricultural education department. The prevalence of hands-on learning at the school was interesting to P1, P3, and P7. Participants also observed faculty members’ desire for continuous improvement, noting recent changes, such as curriculum enhancement to meet needs (P3, P6); teaching marketing (P4); expanding to 4-year program (P8); and using contextually appropriate practices (P8). P5 and P7 observed the activities at the Belize Horticultural Demonstration Unit were very similar to the teaching, research, and outreach missions of U.S. land-grant universities; these types of observations demonstrate students used the journals to make comparisons as a form of critical reflection.

Community education. Informal and community education was of interest to seven of our participants (87.5%), including the overall value of education to Belizean society (P5) and the discovery that learning is a part of human development (P4). The importance of families to education was prominent in participant journals. Many participants noted farmers are self-taught through tactics like trial and error (P2, P3, P4, P5, P6), reading (P3, P6), the internet (P6), and learning through observation (P4, P6). The role of self-directed learning in the Belizean context clearly resonated with the participants.

Policy. Finally, six of the eight participants (75%) reflected on agricultural and natural resources policies in Belize. When comparing Belizean to U.S. agricultural policies, participants were surprised to learn about the scarcity of policies in Belize, including no policies or regulations for pesticides (P6), organic farming (P4, P5, P6, P7), or land distribution (P5, P8), although P6 learned about efforts underway to develop land use policies. P3 and P5 concluded resource depletion in Belize necessitates policies on agriculture and natural resources. The participants’ discussion of policies provides an indication that they were able to reflect not only upon the technical aspects of agriculture but also extrapolate to the political system in which agriculture operates.

Summary
Students who participated in this short-term study abroad expressed an awareness of Belizean culture and an understanding of agricultural issues in Belize. Certain elements of cultural awareness (Delaney, 2011) were more commonly noted by students. Technical competence largely focused around the agricultural issues students identified before the trip to explore.

In relation to cultural awareness, the two themes of Space and Relatives and Relations were indicated most frequently in the analysis, suggesting students were particularly attentive to and interested in their physical surroundings, as well as focused on their social interac-
tions with Belizeans and the interactions of Belizeans with each other. Despite Time often being referenced as a cultural difference between the U.S. and Latin America (Foster, 2002), the students participating in this course either did not notice significant differences or did not consider the differences as noteworthy as other items they reflected upon. Based on the results observed for this study, instructors hoping to increase their students’ cultural awareness should consider being more explicit in guiding their students through recognition and reflection of each of the cultural elements, perhaps with more targeted reflection questions focused on each element of culture. Additionally, a questionnaire focused on the elements of culture could be administered before and after the experience to quantitatively measure change and provide some focus for students. It is important to note that the specific context in a given country, or even community, might provide very different experiences. The instructor’s knowledge and experience in the context can have great impacts on the overall experience for students.

In relation to technical knowledge, students learned about agriculture in Belize, especially about food production, organic production, marketing, medicinal plants, agricultural education, community education, and policy. The diversity of issues examined by students yielded varying levels of technical understanding expressed in student journals. Future iterations of the course may benefit from picking a single issue (e.g. water rights or land tenure) on which all students focus. This would enable the instructors and trip planners to design a more focused itinerary that encourages students to engage more deeply with that specific issue and may positively impact technical knowledge gained.

Overall, this study demonstrated the plausibility of using critical reflection during a study abroad to help develop both students’ cultural awareness and technical competence. The intentionality of the daily reflective journaling using the guiding prompts provide a good structure for the critical reflection called for by Perry et al. (2012). Based on the specific learning objectives of the course, professors are encouraged to provide additional journal prompts designed to elicit critical reflection on targeted topics. Professors seeking to develop similar short-term study abroad programs focused on both intercultural awareness and technical competence should begin by using the model proposed by Roberts et al. (2013). This will allow instructors to (a) accommodate the prior knowledge and experiences of students (Kolb, 1984; Roberts, 2006); (b) build in deliberate reflection (Lamm et al., 2011; Northfell and Edgar, 2014; Sankey Rice et al., 2014); and (c) think about the transformative learning experiences they wish for their students (Yorks and Kasi, 2006). By perceiving a broader, holistic view, professors can be more deliberate and attentive in selecting specific daily activities to elicit desired results.

**Literature Cited**


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Exploring How Critical Reflection