Agricultural Education Abroad: Keeping Collaborative Course Efforts on the Right Track Using Formative Evaluation

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Abstract

A rising need to prepare students for a more global-oriented workplace has brought awareness of global issues to the forefront of agricultural education. Study abroad courses are increasing in popularity, and agricultural faculty members are being encouraged to develop and implement study abroad courses that will enhance student global competence. Prioritizing course creation over evaluation, faculty are currently collecting very little data that supports their success at reaching defined objective. As a result, study abroad courses are criticized for being unable to reach their designated objectives. Through the utilization of the formative evaluation process, data exhibiting student outcomes and recommendations for the long-term success of agricultural study abroad courses can be realized and used. The main purpose of this study was to identify the usefulness of formative evaluation by exploring its influence on a study abroad course. Changes to recruitment plans, enhanced communication, clearer educational objectives, and increased integration of experiential learning opportunities resulted. The study revealed when the formative evaluation process is followed, planning teams can make immediate changes which assist in the creation of high quality study abroad experiences.

Introduction

Awareness and a deep understanding of global issues have become more important in higher education due to the need to prepare students to compete for positions in an increasingly global economy (Navarro & Edwards, 2008). Student engagement in study abroad programs nationally is expanding at a rapid rate. Bhandari and Chow (2008) reported an 8.2% increase in study abroad participation from 2006 to 2007, a 143% increase within the last decade, and a 400% increase since 1985-86. In addition, more than 75% of parents with children in college believe study abroad is an important part of their child's education (NAFSA, 2006). While Jackson (2008) stated "an ever increasing number of universities are encouraging their undergraduates to participate in study abroad programs" (p. 350), college of agriculture faculty members have been criticized for putting very little emphasis on engagement in global societies (Persons, 2000). Students graduating from colleges of agriculture are perceived as having a "lack of knowledge of how globalization affects the United States and [the] international agribusiness environment" (Stephens & Little, 2008, p. 47). The need for an emphasis on global issues in agricultural undergraduate student curriculum is evident and study abroad opportunities are an ideal way to address this issue (Bhandari & Chow, 2008).

High quality study abroad programs are expected to give hands-on experiences to students in another country, and require faculty pull together complex, multi-disciplinary, diverse teams to develop courses that involve a lot of coordination (Trochim, Marcus, Masse, Moser, & Weld, 2008; United States Department of Agriculture, 2009). Study abroad efforts often cover multiple disciplines and involve the expectation that students will increase their knowledge of complex issues and the impacts of cultural differences within the fields of study (Trochim et al., 2008). As a result, study abroad faculty teams create large scale plans, identify multiple objectives, and

develop ambitious goals. Unfortunately, the goals set for study abroad courses are rarely reached and often fall short of their intended objectives (Koernig, 2007).

The complexity involved in study abroad courses makes it difficult to assess how well a course is designed and implemented, and leaves course developers with little knowledge of what they have done well and how to make programmatic improvements for future courses. In addition, course developers do not always have the time, inclination, or expertise to know how to conduct a proper evaluation (O'Sullivan, 2004). If evaluation data is collected, it is typically summative in nature and rarely looks at the process of implementation and student outcomes over time (Koernig, 2007). One of the key outcomes identified in the National Research Agenda (Doerfert, 2011) is the need to create accurate and reliable data that describes the quality and impact of agricultural education efforts. Therefore, a study examining how the utilization of formative evaluation can (1) provide data that describes the impacts of study abroad courses, and (2) focus on how the evaluation process can result in recommendations relevant to the long term success and sustainability of a study abroad course can assist in developing future direction for creating accurate and reliable data (Rossi, Lipsey, & Freeman, 2004).

Conceptual Framework

The conceptual framework for this study is based on the TOP Model of program development (Rockwell & Bennett, 1994) and Rossi et al.'s (2004) phases of formative evaluation. Using the TOP Model of program development as a basis for the phases of formative evaluation provided a strong conceptual foundation that allowed the researchers to examine how effective and thorough the evaluation plan was, and both were used to guide the methods and purpose of this study.

TOP Model

The TOP Model (Rockwell & Bennett, 1994) provides a framework for assessing how well a study abroad program is performing. Course planners are expected to progress through the TOP model from top left to top right (see Figure 1), detailing how the course will be developed and measured for performance (Rockwell & Bennett, 1994). Starting at the top, Rockwell and Bennett (2004) specify the course developer begin by thinking about the social, economic, and environmental (SEE) conditions they want to change as a result of the course. Examples of SEE conditions addressed by agricultural study abroad courses include economic globalization, agricultural sustainability, and global employability (Bhandari & Chow, 2008). In 2006, the U.S. Senate passed Resolution 308 encouraging initiatives to promote and expand study abroad opportunities. In this resolution the U.S. Senate recognized that "the security, stability, and economic vitality of the United States in an increasingly complex global age depend largely upon having a globally competent citizenry" (p. 2). Therefore, a solid study abroad course should designate the SEE condition changes that will assist in the development of globally competent citizens during the development process.

The second step in the model, practices, is the identification of desired changes in participant practice or behavior resulting from the course (Rockwell & Bennett, 2004). Examples of practice changes include student inclusion of cultural perspectives in future academic studies, communication with people from other countries, or engagement in international careers upon

graduation (Bhandari & Chow, 2008). The third step in the model identifies the desired changes in knowledge, attitude, skills, and aspirations (KASA) (Rockwell & Bennett, 2004). Examples of KASA changes include increased cultural awareness or acquisition of foreign language skills. When the Institute for the International Education of Students (IES) surveyed alumni of study abroad programs from 1950 to 1999, they found 90% reported their experience influenced them to seek out a greater diversity in friends, 87% believed it influenced their subsequent educational experiences, and 76% reported acquiring skill sets that influenced their career path (Dwyer & Peters, 2004) confirming study-abroad courses have assisted participants in KASA acquisition and changing their practices. Expectations are that high quality study-abroad courses are developed to make these changes (United States Department of Agriculture, 2009).

Figure 1. TOP Model (Rockwell & Bennett, 2004)

The fourth step, reactions, represents the type of satisfaction and engagement the program developer wants to get as a result of the program (Rockwell & Bennett, 2004). The reactions step is used to focus on basic human needs. Previous research has shown if basic human needs are not satisfied, deeper learning cannot occur (Forehand, 2005). Participants can react to many aspects of study abroad course designs including the facilities, the instructor, the transportation, and the activities. A high quality study abroad course should be developed with the participants comfort in mind. Traveling abroad can be frightening and overwhelming (Dwyer & Peters, 2003). The more the course developer can do to ensure positive basic need reactions, the higher the likelihood of positive learning outcomes (Maslow, 1943).

The fifth step, participation, is designed to encourage the course developer to think about who should participate, how many should attend, and what type of demographic characteristics they should embody (Rockwell & Bennett, 2004). If the incorrect audience is attracted to participate, learning outcomes will be diminished (Bennett, 1979). The sixth step, activities, focuses on how many and what type of activities are needed to implement the course. Study abroad courses are often planned with limited time and financial resources and overzealous developers will try to do too much (Harrison & Voelker, 2008). The final step, resources, includes the amount of time, costs, and staff/volunteer time needed to implement the course (Rockwell & Bennett, 2004). This is the bottom of the model, because without resources, the rest of the course could not exist.

Phases of Formative Evaluation

In order to assess course developer success using the TOP Model, an evaluation plan must be put in place. In formative evaluation, the information collected may relate to needs assessment, program design, implementation of the designated design, overall and specific impact, and/or efficiency (Rossi et al., 2004). The procedures followed typically include designing, conducting, and reporting evaluation results by focusing on delivering findings that are immediately useful (Patton, 2008). The five phases of formative evaluation include: (1) create a conceptual design for the course, (2) determine evaluation objectives, (3) create an evaluation design, (4) create useable results, and (5) communicate results with stakeholders (Rossi et al., 2004).

Over the past several decades, formative evaluation has become essential in all types of large program development efforts (Brown & Kiernan, 2000). Tim Weston (2004) stated that "for many efforts, evaluators help programs adapt themselves to their environments by making suggestions for altering program design" (p. 52). While conducting a formative evaluation on educational technology adaptation in a large school system, Weston found potential errors in the technology design. When fixed, the increased compatibility of the new technology to the equipment found in the schools led to a higher level of use immediately. Karbasioun, Biemans, and Mulder (2007) used formative evaluation in an international setting to examine how farmers in Iran perceived agricultural extension. As a result, they found the farmers felt short-term extension courses were most useful and that a more participatory approach to working together would increase the farmer's willingness to work with extension personnel (Karbasioun et al., 2007). They were able to make immediate changes, which increased their clientele and enhanced their program. Conducting a formative evaluation, in addition to the traditional summative evaluation, on a study abroad course can enhance programmatic delivery in the moment because it will guide planning teams on making informed decisions regarding the programmatic adjustments needed for positive changes to occur (Brown & Kiernan, 2000).

Purpose and Objectives

The purpose of this study was to explore the influence formative evaluation had on an agricultural study abroad course. The research objectives were to (1) identify how the formative evaluation process influenced the course development process and course implementation (2) identify the key outcomes of the course as identified by the students when assessed as part of the evaluation, and (3) identify how the key findings of the formative evaluation influenced future course development and implementation.

Methods

The impact of a formative evaluation (using both qualitative and quantitative methods) conducted on a study abroad course was examined. The course studied offered many characteristics typical of an agricultural study abroad course effort. It covered a variety of agricultural topics (soil science, plant science, animal science, and entrepreneurship) and included participants from multiple universities. The formative evaluation for the study abroad program was designed to assess the course planning process, course implementation, and

participant outcomes. The course included four pre-sessions and a three week experiential-learning based study abroad experience in Costa Rica.

Qualitative methods were used at several phases during the formative evaluation process to allow the researchers to develop an in-depth description of the factors explaining the present state of the planning and implementation of the course (Merriam, 1998). While offering an in-depth look, these methods lack breadth beyond the current environment, and therefore should only be used to gain insight into this specific situation (Hatch, 2002).

To gain an understanding of the conceptual design of the course a content analysis of the initial planning documents was conducted. Using theory, content analysis divides data into groups *a priori* based on predetermined items of analysis (Lincoln & Guba, 1985). The items of analysis used in this case were based on Rossi et al.'s (2004) formative evaluation theory to ensure the programmatic evaluation aligned with the TOP Model (Rockwell & Bennett, 2004). In addition, the lead instructor and another key team member were interviewed three months prior to the implementation of the course. The interviews were transcribed and content analyzed by the primary researcher. The themes, patterns, and relationships identified by the primary researcher were then discussed with two co-researchers to establish trustworthiness.

Quantitative Student Assessment Methods

A web-based survey research design combining data analysis of students' perceptions to specific items with content analysis of student writing samples was used to assess participant outcomes. More specifically, a pre-test, 7 week intervention, post-test design was used to collect student data. The majority of the questions on the pre-test and post-test were similar, allowing for comparisons over time to determine knowledge level change. All participants completed the pre-test and post-test for a 100% response rate.

The pre-test was administered one week prior to the start of the pre-sessions. Students were asked to rate their level of agreement (1 = *strongly disagree*, 5 = *strongly agree*) with eight statements designed to capture their level of knowledge related to knowledge gain objectives for the course. A knowledge gained scale score was calculated by taking the mean of the participant's responses to the eight items. The scale reliability was calculated at $\alpha = .79$. Demographic questions included university attended, major area of study, current educational status, gender, race/ethnicity, age, and where they grew up.

On the final day of the course in Costa Rica, a post-test was administered. On the post-test participants were asked to rate their level of agreement (1 = *strongly disagree*, 5 = *strongly agree*) with the same set of statements designed to capture the participants level of knowledge related to each of the objectives presented on the pre-test. Participants were also asked to rate the level of importance (1 = *no importance*, 5 = *great importance*) they associated with a set of experiential learning based items used throughout the course and then asked to rate the level they felt they experienced (1 = *did not experience*, 5 = *great degree*) the same experiential learning based items during the course. An importance scale score and an experienced scale score were calculated by taking the mean of the participant's responses to the seven items. The scale reliabilities were calculated at $\alpha = .92$ and $\alpha = .94$ respectively.

In addition, participants were asked to rate their overall satisfaction with the course according to a set of five bipolar adjectives. A satisfaction scale score was calculated by taking the mean of the participant's responses to the five items. The satisfaction index scale reliability was calculated at $\alpha = .95$. The post-test concluded with a series of open-ended questions based on each of the knowledge focused categories, how the participants would like to be involved in international programs in the future, and suggestions for future study abroad courses. Descriptive statistics were used to analyze all demographic and scale-type questions.

Results and Discussion

Objective 1. Influence of formative evaluation process on course development and implementation

The conceptual design of the course as suggested by Rossi et al. (2004) as part of the formative evaluation process was created through a content analysis of the initial program planning documents and interviews with key planning team members. Items of analysis included determining the needs of stakeholders, identifying outside influences, recognizing political pressures, defining the programmatic rationale, and identifying the target audience (Rossi et al., 2004). Funding for the study abroad course was provided by the USDA Higher Education grants program; therefore the primary stakeholder was the USDA. Additional stakeholders included taxpayers (since taxes fund the USDA Higher Education program), the three universities donating in kind services, and an agricultural supply company providing outside funds.

In order to identify the actual problem being solved, the evaluator compared the programmatic objective of the course uncovered through content analysis with those of the planning team, which were different and potentially problematic. In the course planning documents, the programmatic objective was a broad vision of making "a better world" where global collaboration will be easy and everyone will want to adopt sustainable practices. Arguments were made that undergraduates learning about sustainable practices in an international setting would be able to incorporate global perspectives into their future aspirations and work in the U.S. Specific programmatic objectives were not found.

The evaluator also interviewed two of the course key planning team members three months prior to the start of the program. An interview with one of the key team members uncovered a different rationale than that found in the course planning documents. This individual believed by infusing global curricula and international experiences into agricultural majors, agriculturally focused departments would attract more students. The interview with the lead instructor revealed a different perspective and rationale. In a previous visit to [University], she witnessed the hands-on learning and unique problem solving occurring there. She felt U.S. institutions lacked this experiential learning structure and, therefore, doing a disservice to students enrolled in their programs. In essence, she believed U.S. students were missing out on an experience that international universities were offering. She saw a need that could be addressed through a study abroad program that would provide U.S. students an opportunity to experience what is lacking at their current universities. A literature review conducted by the evaluator found many studies examining the practice of experiential learning which showed adult learners prefer to gain new

knowledge through experiential opportunities reflecting the principles of the learned information (Enfield, Schmitt-McQuitty, & Smith, 2007; Warren, 1995; Wulff-Risner & Stewart, 1997). In addition, research had shown the success educators had using experiential learning techniques as opposed to more traditional efforts (Knobloch, 2003).

During the interview with the lead instructor, it became apparent the agricultural supply company providing financial support wanted to benefit from the project. While broad education of sustainable practices was identified as an objective, the lead instructor wanted to be able to report a positive view of genetically modified cotton as an additional end result. After the conversation with the lead instructor, it became apparent the programmatic rationale needed to be clearly identified before going any further in the course planning and evaluation process.

In order to do so, the evaluator took steps to identify the KASA, practice, and SEE condition course objectives, an important part of course development, as outlined by Rockwell and Bennett (2004). Given the course developers were from multiple international institutions, the evaluator asked each of the team members to create educational objectives for their portion of the course. The evaluator expressed concern when 32 educational objectives were returned by the course planning team members. The objectives were pared down by the lead instructor and assembled to create an overall image of what the course would look like. The evaluator adjusted the statements into 23 measureable objectives the evaluation could be based on to determine overall success. With the team spread across several countries it was difficult for all members to meet at the same time via Polycom videoconferencing. In order to communicate information regarding the identified objectives, the evaluator created a narrated PowerPoint sent out via e-mail. It detailed the list of the objectives and described how they might be connected to the overarching goals of the course. Several members of the team reported that they only grasped the entirety of the course plan after reviewing the PowerPoint. Subsequently, the PowerPoint served as the basis for creating the individual learning experiences.

As part of the formative evaluation process, the evaluator developed an impact model and a process model. The impact model showed the path students would take through the KASA, practices, and SEE outcomes identified for the course. The impact model also identified important selection factors for the course including what the participants' demographic profiles should look like, such as year in school and educational major. The process model illustrated the interactions that would need to occur between the course instructors and students, identifying the requirements of the course and how the two groups influenced one another. Both models were shared with the planning team to clarify the conceptual programmatic plan. Through the use of these models, the planning team realized their student recruitment had been dramatically lacking, thereby explaining why the course was under-enrolled. As a result, a graduate student was employed to assist with recruitment. This individual spoke to several large survey college courses about the program and conducted educational sessions to recruit students. Through these efforts the initial enrollment of six was increased to 17 students.

Objective 2. Key findings of the formative evaluation

In the five phases of formative evaluation, Rossi et al. (2004) emphasizes how important it is for the evaluation design to address and measure identified objectives in a useable way. After

working to define the course objectives, the evaluator determined the goals of the student evaluation needed to assess: (a) student demographic characteristics in relation to the target audience (b) student reactions to the course (c) student knowledge gain related to content, and (d) student reactions to the delivery methods.

Demographics

The 17 participants recruited to take part in the course represented [University], [University], [University], and [University]. Eleven of the participants were female and six were male, ranging from 20 to 27 years of age. Thirteen participants were sophomore (12%), junior (41%), and senior (24%) undergraduate students. Four of the participants were graduate students. Eleven were White (non-Hispanic), three were Hispanic and the other three reported "other" as their ethnicity. Ten students grew up in a subdivision of a town or city, five grew up on a farm, one grew up in a rural setting, and one student grew up in the city. The students represented a variety of educational majors including agricultural business (2), agricultural education (2), animal sciences (2), biology (2), economics (2), plant medicine (2), biochemistry, environmental science, environmental and natural resources engineering, horticulture, and mathematics.

Reactions to the Course

Participants were asked to rate their overall satisfaction with the course according to a set of five bipolar adjectives presented as a five point scale with each adjective presented on an opposing side of scale. A mean score of the five items was calculated to determine the participants' overall perception of the course. Participants were generally unsatisfied with the quality of the course (see Table 1) as established by the less than satisfactory overall course quality score (M = 1.52, SD = 0.93). Student satisfaction also surfaced as one of the dominant themes when content analysis, using Weft-QDA (Fenton, 2006), was conducted on the open-ended questions. There was a consensus the overall course was worthwhile, but left room for improvement. Most students recognized the infancy of the course, being the first year it had been offered and relayed their overall enjoyment. Many students felt the concepts taught influenced their feelings about working in international agriculture. One student commented "I would love to continue working in international agriculture. There is so much out there and so much to learn." Another stated "I want to research and implement international agricultural programs as a career after my master's degree." However, students started the course with varying levels of knowledge related to plant disease, animal science, and soil sciences. As a result, many felt specific sections of the course were either too detailed or repetitive of the education they have received previously in the U.S.

Students also identified language barriers as an issue. Several commented on problems related to sections being taught in Spanish rather than English. As a result, bilingual students were expected to translate and spent more time translating than learning. There were a number of positive comments about the people, fellow classmates, and educators with emphasis placed on the value the participants put on the relationship building opportunities provided.

Table 1
Perceived overall quality of the course

	Mean	*SD*	*N*
Beneficial/not very beneficial	1.35	1.12	17
Positive/negative	1.47	1.02	17
Good/bad	1.53	1.02	17
Wise/foolish	1.59	0.94	17
Favorable/unfavorable	1.65	1.00	17

Knowledge Gain Related to Content

Participants were asked to respond to questions about their level of knowledge related to subject matter covered in the course including their cognitive thinking styles, plant medicine, agronomics/crops, animal nutrition, environmental/soils, entrepreneurship, and agricultural sustainability on the pre-test and post-test. The overall perceived knowledge index score prior to the course (M = 2.91, SD = 0.54) was slightly lower than the overall perceived knowledge index score (M = 3.07, SD = 0.70) after the course. When knowledge items were reviewed individually, the results indicated there were positive mean differences in five of the eight knowledge level areas (Table 2). The largest mean differences occurred in participant knowledge of gastrointestinal physiology of farm species (0.88) and knowledge of the requirements of good soil stewardship (0.53). Participants may have over-estimated their knowledge levels prior to the course, resulting in the negative mean differences.

Table 2
Perceived student knowledge gain

Statement	*Pre*	*Post*	*Difference*
My current level of knowledge of the gastrointestinal physiology of farm species is very high.	2.18	3.06	0.88
My current level of knowledge of the requirements of good soil stewardship is very high.	2.59	3.12	0.53
My current level of knowledge of agricultural sustainability is very high.	3.29	3.71	0.42
My current level of knowledge of plant disease diagnosis is very high.	2.24	2.47	0.23
My current level of knowledge of natural pre-harvest food safety intervention strategies is very high.	2.53	2.71	0.18
My current level of knowledge of correct plant management practices is very high.	3.06	2.82	-0.24
My current level of knowledge of the concepts critical to an agricultural feasibility plan is very high.	3.29	3.00	-0.29
My current level of knowledge in regards to my cognitive thinking style is very high.	4.12	3.65	-0.47

Note: Scale: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree or Disagree*, 4 = *Agree*, 5 = *Strongly Agree*

Participant knowledge gained as a result of the course also surfaced as one of the dominant themes when content analysis, using Weft-QDA (Fenton, 2006), was conducted on the open-ended questions. The responses could be assigned to one of four primary subject matter areas including plant disease, animal nutrition, soil science, and entrepreneurship. Within plant disease, the most common pieces of information gained included an understanding of the major categories of plant diseases and how they are transferred, identifying enations created by leaf diseases, effects of nitrogen deficiency, differences between fungi and bacteria, disease diagnosis, insects that are common pests in Latin America, and the basic signs of plant disease. For animal science, the identified subject matter recollected included livestock dietary requirements, the importance of nitrogen and phosphorus ratios, types of forages fed to livestock species, and the differences between ruminant and non-ruminant animals. Within soil sciences, the identified items included understanding the soils of Costa Rica, defining layers and horizons, understanding the importance of drainage, water and nutrient retention, concerns regarding pH levels, and how to diagnose nitrates. For entrepreneurship, the majority of information learned included business plans, the problems and solutions to identify when starting a business, and the efficiency of the concept of sustainability in business planning.

Reactions to Delivery Methods

Participants were asked to rate the level of importance and level of experience they associated with a series of items related to delivery methods used during the course. Participants reported an overall higher level of importance (M = 4.42, SD =0 .72) than level of experience (M = 3.09, SD = 1.02) with the items. When the items were reviewed individually, the results indicated there were negative mean differences between the level of importance associated with the items and the degree to which the items were experienced. The largest mean differences occurred with respect to having an [University] student as a mentor/partner (-1.77) and communication with [University] students (-1.58) (see Table 3).

Table 3
Level of importance versus degree experienced

Item	Importance	Degree	Difference
Having an [University] student as a mentor/partner	4.12	2.35	-1.77
Communication with [University] students	4.29	2.71	-1.58
Friendship with [University] students	3.94	2.71	-1.23
Communication with Latin American farmers	4.59	3.41	-1.18
Hands on learning experiences	4.82	3.65	-1.17
Learning about the perspectives of Latin American farmers	4.29	3.06	-1.17
Actual experience on a Latin American farm	4.88	3.76	-1.12

Note: Scale: 1 = *No Importance*, 2 = *Low Importance*, 3 = *Average Importance*, 4 = *High Importance*, 5 = *Great Importance*

Objective 3. How key findings influenced future course development and implementation

A review of the quantitative evaluation results from the course revealed useful information showing that a good evaluation design is one that yields credible and useful information (Rossi et al., 2004; Patton, 2008). With only 17 total participants the planning team was unable to reach

the course capacity of twenty. Only 13 of the students represented the defined target audience. Two of the students were not from the identified institutions, several of the students did not come from agricultural majors, and four were graduate students rather than undergraduates. The importance of student recruitment and enrolling the proper audience were supported by the participants lack of satisfaction with the course due to information taught being either to basic or too complex for the students' initial level of knowledge.

When overall knowledge index scores were compared, there was a small difference of +0.16 between the mean score on the pre-test and post-test. This represents an insignificant change in knowledge levels. The lack of knowledge index score change supported the argument that the amount of educational objectives created by the course planning team was unrealistic. The number of educational objectives needed to be paired down to target specific goals in order to show knowledge gain in future courses.

Given the results of the assessment, the course developers found the delivery methods planned were appropriate for the audience considering the level of importance expressed. This was supported by the emphasis the participants placed on their enjoyment surrounding the personal relationships they built while studying abroad. However, the course developers were unable to deliver the educational experiences at the level the participants were expecting. Placing an emphasis on these items in future courses will likely enhance participant satisfaction and knowledge gain.

Conclusions

The formative evaluation process had an impact on both the program planning and implementation process of the study abroad course. Initially, content analysis of the course planning documents and the interviews with key planning team members helped the planning team clarify what they wanted the students to learn. This is consistent with Rossi et al.'s (2004) framework which states that clarifying the program's plan is imperative to its success. In this case, had the programmatic plan not been clarified, clear course objectives, known to be essential in proper program development, would not have been identified (Rockwell & Bennett, 2004).

Unfortunately, the course planning team created too many objectives based on the large-scale, multi-disciplinary plan they had put together (Trochim et al., 2008). Instead of prioritizing educational efforts, the planning team members were spread thin, unable to achieve the knowledge gain desired, falling short of their intended objectives. Creating too many ambitious goals is a common mistake when creating study abroad programs (Koernig, 2007). This finding supports the need for the formative evaluation framework (Rossi et al., 2004) which identifies the creation of clear, unambiguous, achievable objectives as a necessity when program planning.

Once the objectives were identified, the PowerPoint created by the evaluator was an effective communication tool for the multi-institutional, culturally diverse team. The PowerPoint was used to focus the team on creating their separate units based on a common goal offering recommendations relevant to long-term success (Rossi et al., 2004). The development of impact and process models also had an immediate effect on program planning by showing the need for enhanced recruitment. The formative evaluation process allowed the evaluators to help the

course planners adapt to their environment by suggesting programmatic alterations, consistent with Weston's (2004) experiences when using formative evaluation methods in schools.

While the planning team was unable to reach full capacity, their initial enrollment was increased from six students to 17 when recruitment was emphasized after reviewing the models. Again, the course planning team was unaware that accepting participants outside of the target audience would create issues. The TOP Model clearly indicates the participants must be clearly defined to ensure the program will operate correctly (Rockwell & Bennett, 2008). The formative evaluation results revealed that having the wrong participants resulted in lower knowledge gains than expected and a lower level of satisfaction due to participants feeling learning experiences were too simple or too difficult. The formative evaluation process offered insight into the fundamental issues with the study abroad course, offering the planning team solutions that will assist in future study abroad course planning and implementation.

Lastly, the participants placed a high level of importance on experiential learning opportunities. At the same time, they reported that they did not experience the activities at the level of importance they associated with them. In order to engage learners and enhance the level at which they can absorb knowledge, experiential learning opportunities should be incorporated with knowledge objectives in mind as noted by Rockwell & Bennett (2004). The formative evaluation results suggest that the course planning team needs to include field work instead of lectures and increase the amount of time participants spend working with international partners on subject matter important to the course. Considering the intended outcomes of study abroad courses in general are student inclusion of cultural perspectives and increased communication with people from other countries (Bhandari & Chow, 2008), the formative evaluation process of this course identified the types of opportunities study abroad course developers need to implement to achieve enhanced global competence as an outcome.

Implications & Recommendations

This study shows that using the formative evaluation process can be beneficial when working on a diverse, international effort. When followed, course planners do not have to wait for suggestions regarding changes and adaptations. With formative evaluation issues are not only identified at the end of the course, but while course planning is occurring. Adding this insight gives the planning team an opportunity to fix a problem as it occurs, thereby increasing their chances of success in reaching course objectives. In addition, planning teams have the benefit of a detailed report at the conclusion of the evaluation.

On many occasions, evaluation materials are only used when it is too late to make adjustments. Study abroad course evaluators should consider how formative evaluation recommendations can be framed to emphasize use rather than passing judgment so they can be implemented immediately by the team. This should occur during the planning process to enhance and alter programs while there is still time to do so. In addition, making small adjustments identified by the formative evaluation process in coming years, long-term success and sustainability of study abroad courses can be achieved.

A study evaluating a single multi-year course over time, taking an in-depth look at how the provided recommendations from a formal formative evaluation actually affected future programming and evaluation choices would be useful. Specifically tailoring a study to examine the amount of change to the educational objectives, impact model, process model, and evaluation design prior to and after the formative evaluation process would be ideal.

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