

The Effects of an Ecotourism Trip to Costa Rica on Students' Attitudes, Motivations, and Environmental Knowledge

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This project examines ecotourism in a collegiate, study abroad program. The objectives of this study include identifying (1) any possible changes in environmental knowledge after a university study abroad program and (2) which aspects of the program students value and how those changed upon completion of the trip. The methodology of this study involves three questionnaires of a group of 24 University of Florida students who attended a weeklong study abroad trip to Costa Rica in March of 2010. Questionnaire topics included student motivations for participating in the program, student values of different study abroad activities, knowledge-based questions, and student demographics. T-tests were conducted between demographics, knowledge scores, motivations, group memberships, and other variables. From the results, we conclude that study abroad programs do give students increased knowledge in ecological and cultural facts and these facts can last for the long-term (in this case, at least six months). Along with increased knowledge, aspects related to students personal growth is highly valued and substantial.

INTRODUCTION

Ecotourism is a growing phenomenon that serves to educate tourists about sustainability while providing funding for local conservation efforts. There is a broad range of ecotourism trips, including camping in Yosemite National Park, white-water rafting in the Grand Canyon, bird-watching in Costa Rica, kayaking in Alaska, and so on. The ecotourism movement has generated a lot of enthusiasm around the world because it is thought to be a great alternative to other types of tourism as well as both profitable and sustainable. Indeed, many believe it is a solution for growth in developing nations because it provides opportunities for both economic development and environmental protection (Honey, 2008).

While ecotourism promises many benefits, it is difficult to measure the purposeful benefits of ecotourism, namely participant education and behavior modification. Perhaps this is due to the fact that there are a variety of definitions of ecotourism. These beliefs range from all encompassing, stating all tourism can be classified as ecotourism, to the other extreme, which is the belief that it is impossible to conserve areas with any form of outside human influence, and thus ecotourism is a contradiction. (Orams, 1995). Some trips emphasize the experience of tourists by focusing on their satisfaction, enjoyment, environmental learning, and behavior changes while other trips emphasize the preservation of the natural environment by focusing on minimizing disturbances, improving habitats, and ensuring long-term viability (Orams, 1995). Although study abroad programs might be classified as an academic exercise, they possess many of the characteristics described in ecotourism definitions, and much research has been conducted

examining study abroad within a tourism context (Carsello & Greaser, 1976; Chadee & Cutler, 1996; Dukes et al., 1994; Robalik, 2006).

Past research focusing on study abroad within a tourism context provides a framework for the methodology of this study. Specifically, a study by Heather Robalik involved distributing a set of questionnaires to students studying abroad before and after their trips. This study found that self-exploration and cultural experiences were primary reasons students chose to study abroad, and the biggest impacts post-trip were related to cultural immersion and self-exploration. Students reported positive experiences and personal growth (namely, newfound confidence and open-mindedness) that were not expected pre-trip (Robalik, 2006).

Other studies have focused on the effect of tourism trips on tourist perceptions. One experiment used an interactional model to determine the short and long-term effects of a white-water rafting trip to the Grand Canyon. It sorted the variables into dependent, independent, or intervening and included tourist characteristics and management approaches to assess the impact of the immediate outcomes of the tour on the conservation area. They concluded that ecotourism can influence participant knowledge and behavioral intentions when combined with proper "management policy, operational guidelines, and voluntary efforts" (Powell et al, 2009). The study made no attempt to qualify or quantify the long-term effects of ecotourism. Another related case study interviewed participants on a trip to Queensland, Australia on a sea turtle-based conservation trip and concluded that the ecotourism experience had a significant impact on environmental learning. The authors of the study found that

direct interaction with wildlife contributed to the success of the trip and found a direct correlation between environmental learning and entertainment value (Tisdell & Wilson, 2005).

This research is unique as it looks at ecotourism in a study abroad context. The context of the study is to find the link between an ecological study abroad program (i.e., ecotourism) and participant knowledge of protected areas. This study should support previous findings that demonstrate ecotourism’s impact on environmental learning and an influence on student personal growth. This study will evaluate a group of University of Florida students who went on a weeklong ecological trip to Costa Rica in March of 2010. Because this is an annual study abroad trip, the survey was designed to be conducted again the following year. This study will determine the short-term (immediately after) and long-term (six months later) effects of the trip on the students’ ecological awareness and perspective using descriptive statistics, a mix of qualitative and quantitative analysis, and several t-tests.

METHODS

Researchers surveyed twenty-three University of Florida students who attended a seven-day study abroad trip to Costa Rica in March 2010. They included eighteen females and six males ages nineteen to twenty-eight. The students ranged from undergraduate sophomores to graduate students, but the majority of students were undergraduate juniors and seniors. The most common major was Wildlife Ecology, followed by Agricultural Education and

Communication, Environmental Science, and Anthropology. Twenty out of the twenty-three students reported having special interests in particular environmental issues (Table 1).

Table 1. Student Environmental Characteristics

Environmental Characteristics	Frequency	Percent ¹
Subscription to environmental magazines	4	17%
Member of outdoor/environmental clubs	10	43%
Special interest in environmental issues	20	87%

¹N=23

The students completed three questionnaires: a pre-trip questionnaire one week before the trip, a post-trip questionnaire one week after the trip, and a post-trip questionnaire six months after the trip. The first two questionnaires were administered in class meetings, and the final was online. Questionnaire topics included students’ motivations for participating in the program; values of different study abroad activities; knowledge of Costa Rica, tropical forests, and tropical agriculture; membership to environmental organizations; participation in environmental activities; and demographics. Data analysis included descriptive statistics to measure student demographics and preferences for trip characteristics, and t-tests were conducted between demographics, knowledge scores, motivations, group membership, and other variables. Knowledge scores were determined by a knowledge-based questionnaire (Table 2).

Table 2. Knowledge-based Questionnaire

Question	Answer
What are some of the major threats to Costa Rica’s environment?	deforestation, loss of biological diversity
Why is species richness and biodiversity so much greater in the tropics than in the temperate regions?	latitudinal gradient
The success of Costa Rica’s payment for environmental services (PES) program has led to a recent increase in forest cover.	true
What are some of Costa Rica’s most threatened wildlife species?	harpy eagle, giant anteater
Why does Costa Rica have such great hot springs?	magma from its many volcanic areas
Which of the following is an indigenous tribe of Costa Rica?	Bribri
Although nature-based tourism is considered an important income source for local communities, which is a major reason many local residents do not receive equitable revenue from tourism?	profits often leak out of the community to stakeholders from outside the community
What is the Holdridge’s Life Zones classification system?	a system to classify vegetation according to latitudinal regions and altitudinal belts
What is a dairy cooperative? How does it work?	farmers who pool their dairy resources to maximize profit
What products are made at the Dos Pinos plant?	powdered milk and ice cream

RESULTS

On the six-month post-trip survey, 62% of students reported that the study abroad trip changed their perception of Costa Rica. Of the twenty-three students, 71.4% reported having a “very favorable” attitude towards Costa Rica, and 28.6% reported having a “somewhat favorable” attitude. Nobody reported a neutral or unfavorable attitude. When asked about motivation to travel outside the country again, 96% of students reported feeling “very motivated,” while 4% (one student) reported feeling “somewhat motivated.” No student reported feeling unmotivated.

For the one-week post-trip survey, students were asked to describe their three favorite and least favorite activities from the trip and why. The answers among the students were strikingly similar. Twenty-one students mentioned active activities such as zip-lining, hiking, and horseback-riding; eight mentioned cultural activities, such as visiting the Indian reserve and talking with locals; six mentioned social activities, primarily relaxing at the hot springs; and one mentioned lectures. All of the responses to the least favorite activities included some kind of physical discomfort: most commonly, dislike of local food, long bus rides, and uncomfortable sleeping conditions.

A paired t-test was performed to determine if the study abroad trip was effective in increasing the score on a knowledge-based questionnaire about Costa Rica. The initial t-test compared the pre-trip score to the one-week

post-trip score. The mean accuracy increased from 37% to 73%. The mean percentage increase was 39% with a standard deviation of 5% ($t(22)=7.99$, two-tail $p=6.0 \times 10^{-8}$), providing evidence that the trip increased knowledge about Costa Rica. A 95% C.I. about mean score gain is 28.65%, 48.74%. A second t-test confirmed that this increase was retained when students were tested again six months later.

The following year, seventeen comparable students on the same trip were asked the same questions pre- and one-week post-trip, and they experienced a similar knowledge gain. The mean accuracy increased from 55% to 85%. The mean percentage increase was 30% with a standard deviation of 5% ($t(16)=6.00$, two-tail $p=1.85 \times 10^{-5}$).

Students were asked to rate how important various activities were to a study abroad course on a scale of 1 (not at all important) to 5 (very important). Several paired t-tests were performed to determine if the means differed when students were asked about the same activities before and after the trip. No significant differences were found, indicating that students valued the relative importance of each activity similarly before and after the trip. Pre-trip, students ranked “participating in cultural activities,” “eating local foods,” and “wildlife watching” as the most important activities. Post-trip, students ranked “taking guided hikes of protected areas,” “talking with locals,” and “wildlife watching” as the most important (Table 3).

Table 3. Preference for Activities

Activities	Pre-trip Survey		Post-trip Survey (one-week post)	
	Mean ¹	Standard Deviation	Mean ¹	Standard Deviation
Wildlife watching	4.565	0.662	4.500	0.598
Eating local foods	4.522	0.665	4.136	0.640
Participating in cultural activities	4.348	0.647	4.227	0.685
Taking guided hikes of protected areas	4.304	0.876	4.591	0.503
Talking with locals	4.304	0.703	4.091	0.684
Participating in optional recreation activities (e.g., zip line)	4.217	0.736	4.227	0.752
Spending free time with group	4.087	0.733	4.091	0.610
Organizing and preparing	3.783	0.850	3.500	0.913
Individual free time	3.696	0.876	3.682	0.839
Attending guided tours of agricultural areas/facilities	3.522	0.994	3.227	0.922
Participating in group activities (e.g., completing assignments)	3.391	0.783	3.318	0.894
Visiting bars/clubs	3.000	1.000	2.932	1.094
Attending lectures	2.957	1.065	3.318	0.716
Souvenir shopping	2.913	0.996	2.773	1.066

¹ 1=Not at all important, 2=Not very important, 3=Neutral, 4=Somewhat important, 5=Very Important

Students were also asked to rate different reasons for participating in a study abroad course on a scale of 1(not at all important) to 5 (very important). Pre-trip, students ranked “have fun,” “learn about environment,” and “go hiking” as the most important motivations pre-trip; post-trip, students ranked “had fun,” “met new people,” and

“went hiking” as the most important motivations. No significant differences were found pre- and post-trip for the majority of the motivations; however, students ranked “seeing exotic vegetation” and “learning about ecotourism” as more important after the trip than they did before the trip (Table 4).

Table 4. Preference for Motivations

Motivations	Pre-trip Survey		Post-trip Survey (one-week post)	
	Mean ¹	Standard Deviation	Mean ¹	Standard Deviation
Have fun	4.783	0.422	4.864	0.351
Learn about environment	4.565	0.590	4.591	0.590
Experience another culture	4.522	0.665	4.636	0.727
Go hiking	4.522	0.665	4.864	0.351
Travel to a new place	4.522	1.163	4.682	0.894
Learn about tropical ecosystems	4.435	0.843	4.591	0.590
Learn about new culture	4.348	0.832	4.500	0.598
See exotic animals	4.348	0.775	4.591	0.734
Meet new people	4.261	0.752	4.773	0.528
Learn in an international setting	4.217	0.850	4.636	0.492
Participate in inexpensive study abroad trip	4.000	1.128	4.500	0.673
See Costa Rica’s geology	3.870	0.815	4.545	0.739
Learn about ecotourism	3.783	0.795	4.273	0.827
See exotic vegetation	3.783	0.795	4.727	0.456
Earn 3 college credits	3.435	1.590	4.682	0.894
Learn/use Spanish	3.304	1.363	3.727	1.241

¹1= Not at all important, 2=Not very important , 3=Neutral, 4=Somewhat important, 5=Very Important

DISCUSSION AND CONCLUSION

The context of the study is to find the link between an ecological study abroad program (i.e., ecotourism) and participant knowledge of protected areas. The study involved a set of three questionnaires given to a group of twenty-three University of Florida students who attended a weeklong study abroad trip to Costa Rica. Questionnaire topics included students’ motivations for participating in the program, values of different study abroad activities, and knowledge of Costa Rica.

Results support previous findings and show that self-exploration and cultural experiences are primary reasons for studying abroad (Robalik, 2006). The students highly valued having fun and experiencing a new culture pre-trip, but they also valued environmental activities and experiences. This strong interest in the environment is most likely related to students’ personal interests and the nature of the trip. The positive responses post-trip indicated that

the trip satisfied student motivations. The six-month post-trip questionnaire indicated that the trip had resulted in changed, favorable attitudes towards Costa Rica, and the students felt motivated to travel outside of the country again.

The students rated learning about ecotourism and seeing exotic vegetation more highly post-trip. Both of these aspects were emphasized through lectures and guided hikes of protected areas. This shows that through study abroad students learn to appreciate new concepts and ideas that they previously did not rate as important; however, instructors must work to stress these new concepts in different ways throughout the trip.

The increase in the accuracy of knowledge-based questions indicates that study abroad programs do give students increased knowledge in ecological and cultural facts, and these facts can last for the long term (in this case, at least six months). This indicates that classroom learning does have a place in study abroad context when combined

with hands-on learning. Along with increased knowledge, aspects related to students personal growth is highly valued and substantial. Based on student responses to open-ended questions, they experienced personal growth primarily through active and cultural activities.

There are several limitations to this study. The small sample size makes it more difficult to generalize the findings; however, it should be noted that many significant statistical relationships were found. The fact that the students choosing this trip had previously demonstrated interest in environmental issues may have contributed to their positive assessment of the activities and personal growth. Also, students may have experienced memory

lapses when answering open-ended questions about the trip. The researcher attempted to alleviate this by asking these questions on the one-week post-trip survey.

The findings of this study may be used as evidence for the positive impact of ecotourism study abroad trips on student knowledge and growth. While this study is an in-depth analysis of one trip, results suggest the findings can be applicable to other study abroad trips as well. Recommendations for future research include expanding pre- and post-trip analysis to a variety of study abroad programs in other countries. Further research could be done to determine whether the increase in environmental knowledge affects student behaviors.

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