

# Exploring Attitudes and Beliefs of Current and Future Agricultural Teaching Faculty Prior to an International Professional Development Experience

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## Abstract

Graduates of higher education institutions increasingly function in globalized contexts, especially students of agricultural and life sciences. Faculty who undertake experiences abroad can internationalize their curricula to present students with global perspectives. However, reflection prior to travel is important to identify pre-existing perceptions, attitudes and beliefs to enhance the international experience. This study explored the reflection of current and future agricultural teaching faculty engaging in study abroad to Belize. Seven faculty and doctoral student pairs (n = 14) completed a questionnaire describing (1) attitudes/beliefs about visiting Belize and (2) attitudes/beliefs about Belizean culture. Emergent themes were identified using the constant comparative method. Themes from question one included general excitement, travel expectations and environmental expectations. Themes from question two were cultural, socio-political and environment and resource-based attitudes/beliefs. Overall, reflection showed biases or knowledge gaps, which allows trip planners to improve the participants' experiences. Replication or follow-up investigation during the international experience can enhance this research.

## Introduction

Globalization has increased the demand that graduates of all colleges, including agricultural and life sciences, be prepared to work in a globally directed society (Gibson et al., 2012; Gouldthorpe et al., 2012a). Institutions of higher education are increasingly required to produce graduates capable of functioning in a global

context (National Association of State Universities and Land-Grant Colleges [NASULGC], 2004). This trend is especially true in agriculture where international cultural, social and political issues impact trade and food production (Brooks et al., 2006; Bruening and Shao, 2005). However, strategies and efforts to internationalize educational programs often vary. The National Research Council [NRC] (2009) identified two major models for preparing globally-competent graduates: (a) by improving access to international experiences for students and (b) by incorporating international elements into curricula.

Many institutions primarily responded by increasing study abroad opportunities (Brooks et al., 2006; Crunkilton, 2003; Dooley et al., 2008) and student participation has tripled in the past twenty years (Institute of International Education [IIE], 2010). Despite this increase, fewer than 1 % of students study abroad every year (National Association of International Educators [NAFSA], 2003) and agriculture students are the least represented (Bruening and Shao, 2005). As a result, study abroad alone has not adequately internationalized higher education (Moore et al., 2009), which still lacks the depth and breadth to prepare students for the challenges they face upon graduation (Green et al., 2008).

The second strategy advocated by the NRC (2009) involved internationalizing the curricula. Faculty members are in a unique position to modify the curricula (Lunde, 1995) and have been central to the incorporation of global elements (Association of International Education Administrators [AIEA],

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1995). Russo and Osborne (2004) asserted that faculty efforts to incorporate global topics into their teaching were the second most effective method of creating globally-competent graduates behind only study abroad experiences. Incorporating global topics and perspectives into agriculture and related courses can also help to create meaningful learning experiences for students. According to Doerfert (2011), “*The role of the teacher in meaningful learning is to move from being the sole source of knowledge to becoming a facilitator of a holistic learning environment and engaged learning process*” (p. 21).

Navarro (2004) determined that efforts by faculty to internationalize curricula required opportunities for training/professional development and international experience. Faculty study abroad allows for individual transformation that cannot be achieved by other means (Gouldthorpe et al., 2012a; Sandgren et al., 1999). This transformation influences their teaching, encouraging them to interweave their experiences into their courses. Faculty who possess and share international experiences with their students provide an extra dimension to internationalize their courses (Bruening and Shao, 2005). Institutions committed to internationalizing curricula must support and incentivize international professional development and remove the barriers that often prevent faculty from engaging in these opportunities (Dewey and Duff, 2009; Navarro, 2004; Russo and Osborne, 2004). The need for faculty to undertake international experiences remains essential (Childress, 2009; Schuerholz-Lehr et al., 2007). Institutions must support curricula internationalization and enhancement (Robson and Turner, 2007; Van Gyn et al., 2009). In order to better prepare faculty to engage themselves during the international experiences, more needs to be understood about preparing faculty to be learners.

One strategy to help faculty globalize their courses is to enhance their own understanding of global aspects of their disciplines through experience and professional development. In the Teaching Locally, Engaging Globally (TLEG) projects (Harder, 2009; Harder, 2011), current and future teaching faculty participate in short-term international experiences with the goal of gathering information to create reusable learning objects (RLOs) that can then be used in on-campus courses (Harder, 2011). Although a longer-term immersive experience might be desirable, many current and future faculty cannot dedicate more than a limited amount of time to such an activity. Given the time constraints for these experiences, providing high-quality learning opportunities that go beyond academic tourism is critical (Gibson et al., 2012). Even a short-term in-depth immersion “produces a qualitatively different type of

globalization of the curriculum and a more enduring change” (Sandgren et al., 1999, p. 54).

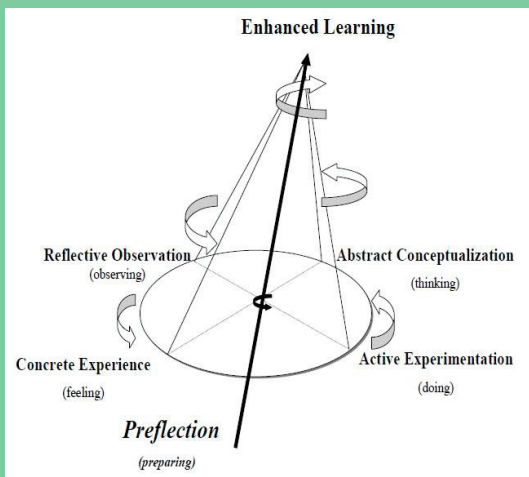
As short-term international faculty experiences are being planned, understanding thoughts and perceptions related to the specific context in which the experience is to occur is essential (Gouldthorpe et al., 2012b; Harder et al., 2012). These insights can lead to the establishment of best practices that meet the research, course creation and professional development needs of individual faculty members. Applying best practices will enhance the faculty experience and ultimately maximize the potential for impacting students upon return to campus.

A constructivist epistemology and theoretical framework are used for this study and the overall TLEG model. Constructivism is commonly applied to learning contexts and is guided by the belief that learners construct meaning from their experiences (Gergen, 1995). According to Doolittle and Camp (1999), “*constructivism acknowledges the learner’s active role in the personal creation of knowledge [and] the importance of [the] experience (both individual and social) in this knowledge creation process*” (p. 6). Piaget (1964) also suggested that learning and the formation of meaning move through a process of adaptation and organization, while Dewey (1938) advocated allowing learners to independently develop meaning from experience. Kolb’s (1984) experiential learning model described this learning process as ongoing and guided by experience, observation, conceptualization and experimentation. Reflection on prior experience allows learners to build on previous knowledge and is another fundamental component to the experiential learning cycle (Kolb, 1984).

While Kolb’s (1984) model typically begins with experience, Jones and Bjelland (2004) proposed the use of a pre-reflection phase prior to the activity itself. This stage is termed prefection and defined as “the process of being consciously aware of the expectations associated with a learning experience” (Jones and Bjelland, 2004, p. 963). Preflection allows learners and educators to identify and examine biases, preconceptions and attitudes they might have prior to learning activities or experiences. Preflection is meant to create a bridge between thinking about an experience to actually learning from it (Figure 1).

Since international experiences are used to prompt learning, pre-existing biases, preconceptions and attitudes must be understood before departure to allow for a more rich and meaningful experience. Thus, identifying pre-existing conditions that may impact participants’ learning within the TLEG experience is important (Gouldthorpe et al., 2012b). Furthermore, Harder et al. (2012) found that “*a prelective activity*

Figure 1. Preflection model of experiential learning. Adapted from "International Experiential Learning in Agriculture," by L. Jones and D. Bjelland, 2004, *Proceedings of the 20th Annual Conference of the Association for International Agricultural and Extension Education*, Dublin, Ireland, 20, 963-964. Reprinted with permission.



can be used to build substantive theory and increase understanding of pre-trip beliefs of faculty” (p. 15).

Previous research examining international experiences of faculty was also reviewed to provide background for this study. Through the use of preflection, Dooley et al. (2008) identified expected gains from participation in an international experience. Five anticipated gains were found: (a) encouraging collaboration and contacts with foreign colleagues, (b) contribution to academic practices, (c) knowledge gain about foreign cultures and university systems, (d) recruitment of students and (e) building lasting and meaningful relationships with other faculty. Dooley and Rouse’s (2009) examination of the long-term impacts of an international experience on faculty found that participants expanded their curriculum through the incorporation of personal stories and experiences as a result of their faculty study abroad.

Faculty that engage in study abroad experiences enhance both self-awareness and social awareness through immersion in the culture (Sandgren et al., 1999). Sandgren et al. (1999) examined the effects of study abroad on faculty members and created a casual model demonstrating the ties between the experience, self-awareness, social awareness and ultimately their teaching. Faculty identified increased awareness in recognition of an aspect about themselves before participation, “leading them to reflect on this part of themselves for the purpose of changing or confirming their sense of self” (Sandgren et al., 1999, p. 49). Similarly, the experiences served to increase social awareness in faculty. These gains in self- and social-awareness led to the transformation of their teaching. There were expressed changes in “course content (e.g., examples from the trip used in class), teaching techniques

(e.g., using more group work), philosophy of teaching (e.g., less authoritarian teaching), or interactions with students (e.g., greater sensitivity to various students)” (Sandgren et al., 1999, p. 49).

After a short-term study abroad in Ecuador, Gouldthorpe et al. (2012a) identified tangible changes in the knowledge, attitudes, skills and aspirations of current and future teaching faculty participants. Respondents showed increased knowledge and improved attitudes about the host country. High aspirations to incorporate international topics into teaching, research and extension appointments were also found. Additionally, the experience enhanced faculty participants’ understanding of research processes, helped identify potential new research topics and improved the ability to communicate about foreign cultures.

Various studies have also identified barriers preventing faculty from engaging in international opportunities (e.g. Andreassen, 2003; Dooley et al., 2008). Andreassen (2003) separated these into external and internal barriers. The external barriers included lack of time, financial constraints, lack of language skills, difficulty leaving current research and lack of administrative support. Andreassen (2003) recommended that “The reduction or elimination of the external barriers to participation should be examined in order to insure that there are competent, skilled professionals willing and able to carry their institutions’ missions to other countries” (p. 68). Examining internal barriers was equally important, which included fears about a different culture and political unrest, ethnic prejudices and cultural biases and a sense of “American Superiority” (Andreassen, 2003, p. 67).

Although there has been much research conducted pertaining to faculty international experiences, still more needs to be done to better prepare current and future faculty to overcome the barriers and have more engaged and meaningful experiences. Through maximization of these experiences, faculty will be able to enhance and internationalize their curriculum in lessons. Dooley and Rouse (2009) stated “It is anticipated that these enhancements will encourage students to pursue study abroad or engage in international/culturally inquisitive scholarship and enrichment” (p. 55). According to the NASULGC, “advances in technology and telecommunications and a remaking of the global economy have created a world in which interdisciplinary, cross-border research and discovery are the norm and expectations for students prepared to live, work and contribute to an interconnected world are high” (NASULGC, 2004, p. vii). Ultimately, colleges and universities are set with the task of preparing students to engage and succeed in a global work environment.

## Exploring Attitudes and Beliefs

The purpose of this study is to explore the pre-existing perceptions, attitudes and beliefs of current and future agricultural teaching faculty participants prior to an international field experience in Belize. Specifically, the research questions were: (a) what are participants' pre-trip attitudes and beliefs about visiting Belize and (b) what are participants' initial attitudes/beliefs about Belizean culture?

### Methods

The study was conducted as a generic qualitative design. Merriam (1998) defined generic qualitative studies as those that seek to "discover and understand a phenomenon, a process, or the perspective and worldviews of the people involved" (p. 11). This study described respondents' pre-trip beliefs and attitudes (pre-reflection) prior to an international experience in Belize, thus qualitative design was deemed appropriate.

The population of this study consisted of faculty and doctoral students in the College of Agricultural and Life Sciences at the University of Florida pre-selected for participation in an international field experience in Belize. A total of 14 participants engaged in this program, composed of seven faculty and doctoral student pairs representing the departments of Agricultural Education and Communication, Agronomy, Fisheries and Aquatic Sciences, Forest Resources and Conservation and Wildlife Ecology and Conservation. Gender participation was equal, with seven male and seven female participants.

To facilitate transferability of the results from this study, providing a context for the experience is important. The activities described in this study are part of a Higher Education Challenge Grant project funded by the United States Department of Agriculture designed to enhance the quality of undergraduate education in agriculturally related programs. The specific experience was designed to give current teaching faculty (n = 7) and their doctoral student partners (future teaching faculty, n = 7) an international experience framed around a common issue, climate change in Belize in this case. Each pair was asked to use the international experience as the basis for creating curricula materials (reusable learning objects, RLOs) to use in their courses that seek to explain how climate change issues are affecting Belizeans.

Data were collected face-to-face through a written questionnaire administered to participants during a monthly planning meeting. Participants were asked to complete a questionnaire with four questions. Two of the open-ended questions

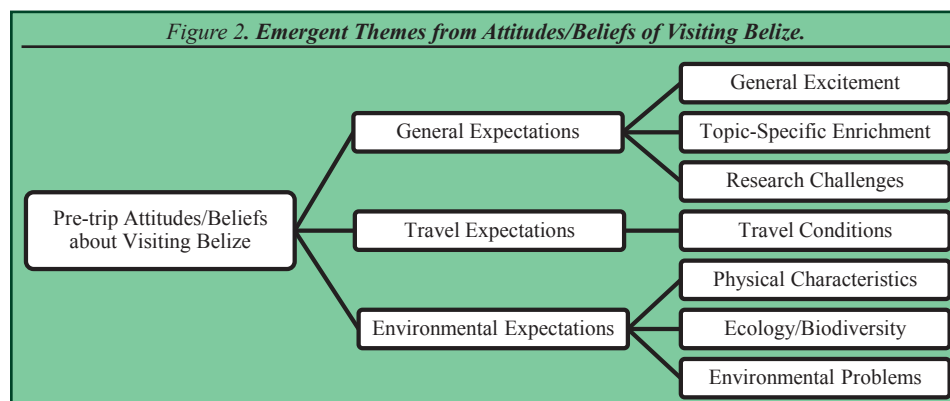
formed the basis of this study. Participants were asked (a) to describe their initial attitudes/beliefs about visiting Belize and (b) to describe their initial attitudes/beliefs about Belizean culture. The instrument was adapted from the work of Dooley et al. (2008), Harder et al. (2012) and Wingenbach et al. (2006). The questionnaires were completed individually with the researchers acting as facilitators. Three participants who did not attend the meeting were furnished the instrument via email and/or hard copy to complete independently. Non-response was addressed through follow-up emails at one-week intervals after administration of the instrument. All of the target participants (n = 14) provided data for this study. Human subject's clearance was approved by the University of Florida institutional review board and participants provided written informed consent.

Data analysis was conducted using the constant comparative method, which identifies similarities, differences and conceptual links within the data (Merriam, 1998). Responses were coded to remove identifying markers. Emergent themes were identified from within the pre-reflection responses (Lincoln and Guba, 1985). The results of the pre-reflection study were grouped according to the two research questions. The data from each research question were broken down by emergent theme, which was further divided by sub-theme. Data triangulation and member checking were used to increase the internal validity and reliability of the study (Lincoln and Guba, 1985; Merriam, 1998).

### Results and Discussion

The first research question asked participants to describe their initial attitudes/beliefs about visiting Belize. Three themes emerged from the responses: general expectations, travel expectations and environmental expectations (Figure 2).

The general expectations theme incorporated respondents' overall objectives and goals for the field experience in Belize. Sub-themes of general excitement, topic-specific personal enrichment and research challenges were found. Excitement for new experiences, learn-

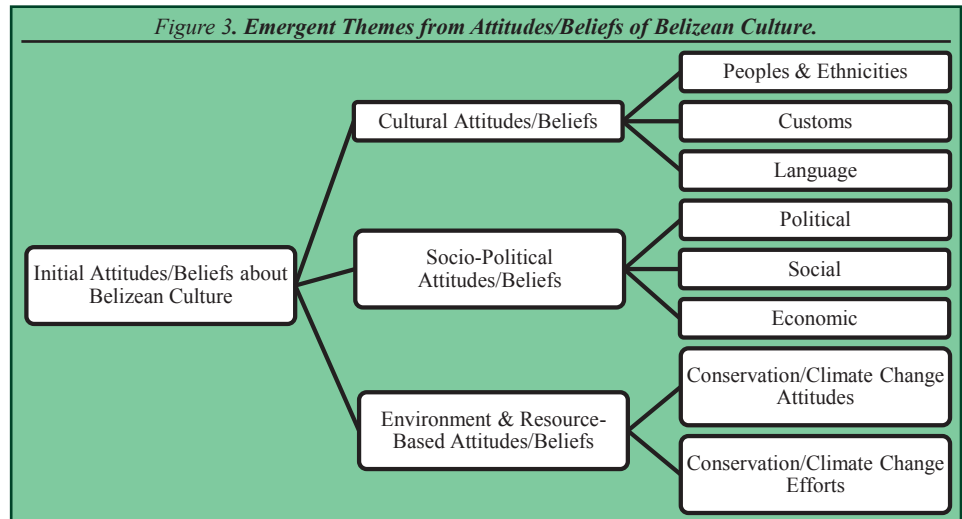


ing about a new culture and love of travel were cited by multiple respondents. One respondent (R12) cited the potential of the experience to “shape my academic career” as a stimulus for excitement. Topic-specific excitement was also pervasive throughout the responses, although this largely aligned with the professional interests of participants. Excitement to explore unique Belizean ecosystems and natural resources (R02, R11, R13), to observe impacts of climate change (R08), to examine political impacts

on development and conservation (R08, R11) and to learn about Belizean communities’ conservation and climate change efforts (R07, R08, R11) were also cited. Finally, expected research challenges were cited. One respondent (R01) described anxiety related to conducting research in another cultural context, while another wondered about “how willing the Belizean people are to share thoughts and perspectives” (R07).

The travel expectations theme illustrated respondents’ assumptions about in-country travel and logistics. Responses are broadly incorporated into the single sub-theme of travel conditions. Several respondents cited Belize’s reputation as a tourist destination as the foundation of their travel expectations for the experience. This assumption manifested itself several ways. First, respondents expected Belizean people to be friendly and welcoming of foreigners (R01, R04, R05) and thought Belizeans would “cater to us” during the field experience (R02). Second, the presence of English as a national language was viewed positively and respondents described the expected ease of conversation as making the experience more “comfortable” (R02, R11). However, one respondent (R07) did anticipate language barriers due to dialects in Belize. Third, respondents were split on the physical travel conditions expected in Belize. While several respondents felt it would be easy to travel in Belize (R04, R05) and expected safe food and “a modern country with clean drinking water and bathrooms” (R02), others expected travel in Belize to be limited by a “primitive infrastructure” (R08) and delays due to “island time” (R01).

Environmental expectations were divided into sub-themes of physical characteristics, ecology/biodiversity and environmental issues. Belize was described as a small country (R05, R06, R09, R10, R13), with “abundant natural resources” (R10), a hot and tropical climate (R02, R04, R06) and varied topographical characteristics (R04, R13). Respondents also expected



diverse ecological systems (R04, R05), high biodiversity (R05, R10) and “more endemic species than [state]” (R06). Environmental problems (climate change effects, flooding, etc.) were also cited (R08, R09, R10).

The second research question asked participants to describe their initial attitudes/beliefs about Belizean culture. Three themes also emerged: cultural attitudes/beliefs, socio-political attitudes/beliefs and environment and resource-based attitudes/beliefs (Figure 3).

The theme of cultural attitudes/beliefs covered a range of topics, grouped into the sub-themes of peoples and ethnicities, customs and language. Diversity characterized respondents’ beliefs about the peoples and ethnicities in Belize. While some responses indicated a belief in “huge” ethnic diversity (R05, R08, R09), others focused on specific ethnic groups. The interaction of English and Spanish peoples (R03, R08, R09, R11), the indigenous Mayan influence (R06, R11), the role of Caribbean (R02, R03, R08) and Guatemalan (R08, R13) groups, the integration of descendants from African slaves (R09) and the presence of Mennonite farmers (R09, R13) were all cited as ethnic and cultural influences present in Belize.

The perceived diversity of peoples led to responses centered on the diversity of Belizean customs. Respondents’ attitudes about Belizean customs were not always congruous. One respondent expected “a difference in social customs between inland and coastal people” (R04), while another expected more cultural homogeneity (R06). Likewise, respondents alternatively felt Belizean customs were “very different” from the rest of Latin America (R12) and “similar to other Central American countries” (R10). One respondent described a “very vibrant culture” (R05), while another suggested Belizean customs “are not as pronounced as in other areas or among other peoples with a longer history” (R03). Other attitudes about customs in Belize centered on the family-oriented nature of its people (R02) and a

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religious climate that is more liberal, diverse and tolerant than in other Central American countries (R03, R04).

Attitudes on language focused on the use of English in Belize. Despite acknowledging large cultural diversity, most respondents felt English was likely the common language across the nation (R03, R04, R08, R09, R10, R12). One respondent asserted that “all Belizeans speak English” (R04) while another asked “how much of the country actually speaks English?” (R08). Others expected to encounter Spanish in certain areas of the highlands (R09, R11, R13) and Caribbean dialects (R03).

Respondents also discussed socio-political attitudes and beliefs of Belize, which are divided into political, social and economic sub-themes. Within the political issues sub-theme, respondents’ attitudes about the Belizean government were mixed. While political stability, effective democracy (R09) and low levels of political unrest (R11) were cited, other respondents expressed beliefs that the Belizean government was weak and not politically stable (R06, R10), corrupt and “self-serving” (R01) and ineffective in developing the country (R03, R06, R08).

Social expectations stemmed from the common belief that Belizeans were largely poor (R04, R06, R08, R11, R13). One respondent postulated that “urban areas are poor and filthy while rural areas are poor but clean,” suggesting poverty was pervasive throughout Belize (R03). Class gaps (R01), poverty-related crime (R04) and lower levels of formal education than in the United States (R06) were cited beliefs.

Economic beliefs about Belize centered mainly on the role of tourism and agriculture, although fisheries (R03, R09) and exported goods (R08) were other economic sources discussed. Respondents largely believed tourism was the driving force in the Belizean economy (R10, R11) and that the economy was dependent on that sector (R09). Agriculture was discussed as both an economic and social component of Belizean culture (R09, R11). Respondents believed that both modern and traditional farming methods were found in Belize, with one stating “we will probably encounter both types of people who make a living in Belize in very different ways” (R02). Others felt that Belizeans would possess a high level of agricultural vocational skills (R06) for modern operations, or that traditional farmers would use a whole-family model typical of farmers in other parts of Latin America (R02). However, despite some respondents’ perceptions of agriculture’s prominent role in the economy, food security issues were also believed to exist in Belize (R08).

The theme of environment and resource-based attitudes/beliefs was well-represented in the data. The data were divided into two sub-themes: conservation/

climate change attitudes and conservation/climate change efforts.

Several respondents believed that Belizeans were conservation-minded and that “a large emphasis on nature/conservation” existed in Belize (R03, R06). This emphasis stemmed from more cultural ties to nature than Americans (R06) and manifested itself as concern from communities (R07, R11), scientists (R03) and the government (R05). Beliefs about Belizean attitudes on climate change were less consistent. One respondent expected people in Belize to be better informed on climate change than Americans (R04). Another suggested a lack of climate change awareness or interest outside of the scientific community and that others had “more pressing societal issues to deal with” (R03).

These conservation and environmental awareness beliefs about Belizean attitudes were also represented in the conservation/climate change efforts sub-theme. One respondent cited Belize’s “progressive parks system” as an indicator that the nation was interested in sustainable development (R05), while another questioned the use of environmentally responsible behavior in policy (R11). One respondent felt that local challenges prohibited efforts to address conservation and climate change issues at the community level despite the desire by communities to act (R07), while another believed that Belizean resourcefulness was central to addressing these challenges (R01).

## Summary

The broad purpose of this study was to explore the pre-trip perspectives of current and future teaching faculty on a study abroad program to Belize and six themes emerged from the data. However, an examination of the frequency and nature of responses showed that respondents were focused on three main areas that cut across these themes.

First, attitudes, beliefs and expectations of culture dominated the data and were generally more detailed and extensive. This trend was consistent with prior research about faculty experiences abroad (Dooley et al., 2008, Gouldthorpe et al., 2012a; Harder et al., 2012). Respondents often expressed strong and authoritative opinions on Belizean culture. Interestingly, these beliefs were sometimes polar opposites, including Belize’s homogeneity versus uniqueness in Latin America, safety/stability versus political instability/crime and modernity/development versus primitiveness. Respondents who cited prior experience in Latin America and even Belize demonstrated greater authoritativeness, yet attitudes and beliefs were still varied. In contrast, a small group of respondents were tentative in their responses, using qualifiers like “I have no previous knowledge of Belizean

culture but..." (R10) and "I do not have a mental image of Belizean customs although..." (R04). Additionally, elements of culture permeated the results from both research questions, despite the design of the instrument. General and travel expectations of the field experience were frequently qualified by discussions of cross-cultural interactions and challenges associated with traveling and conducting research in a different cultural context. Even responses about Belize's physical characteristics (topography, climate, etc.) were inevitably linked to how these factors affected the people of these regions.

This trend was interesting given that the majority (71.4%) of participants were natural scientists and the field experience was directly focused on issues of climate change. Yet respondents overwhelmingly emphasized culture and human dynamics, suggesting an interest in social science topics was the primary motivation for participation. Perhaps respondents were more comfortable with the technical aspects of their fields and were thus more concerned about human impacts and involvement. The desire to compare their own experiences and beliefs to those of Belizeans also appeared in the data through multiple statements comparing Belize to the United States and other more familiar cultural contexts. This finding is consistent with Andreasen (2003) who cited the tendency of participants to compare with their own culture. Harder et al. (2012) also identified a similar trend among faculty engaged in a field experience in Costa Rica.

Second, responses across both research questions and all themes closely aligned with the professional backgrounds of participants. Attitudes about travel to Belize frequently referenced ecology and biodiversity, while beliefs on culture included an emphasis on Belizeans' attitudes towards conservation and climate change. Although the instrument was open-ended, little discussion existed about personal enrichment outside of the context of professional development and climate change awareness. In their prelection study from an Ecuadorian faculty abroad experience, Gouldthorpe et al. (2012b) also found that respondents focused on professional development over personal enrichment.

Third, travel conditions were discussed in little detail and respondents who did address this theme indicated minimal trepidation related to the in-country travel conditions expected in Belize. The low emphasis on and expressed satisfaction with travel conditions stands in contrast to Andreasen (2003) and Dooley et al. (2008), who identified travel concerns for faculty in Latin American field experiences as a barrier for participation. Many responses cited the prominent role of tourism in Belize and English as the national language as factors that "make me more comfortable to travel there" (R02).

Belize's proximity to the United States and an expected high American presence may have also served as causal factors. As a result, responses tended to focus on other aspects of the field experience and perhaps this explains why so much focus was given to culture and other topics.

This study has implications for both practice and research. Practically, conducting a prelection exercise allows participants to more closely examine and formalize their attitudes and opinions of the field experience and cultural context. The analysis of the prelection responses also serves to identify any preconceptions or biases that might impact their time in-country (Gouldthorpe et al., 2012b). Ultimately, this step improves the quality of learning experienced by participants, as demonstrated by Kolb's (1984) experiential learning cycle and updated to include prelection by Jones and Bjelland (2004).

Prelection should be part of any international experience involving field work and travel in an academic setting. Similar activities have been conducted with other international faculty experiences and also with different academic audiences (Dooley et al., 2008; Gouldthorpe et al., 2012b; Harder et al., 2012; Wingenbach et al., 2006). Generating prelection attitudes and beliefs for in-class exercises that include international case studies, narratives, or other means at the undergraduate and graduate level may also be appropriate (Navarro, 2004).

Prelection data can also allow for international experiences to be better tailored to participants' needs, interests and expectations (Gouldthorpe et al., 2012b; Harder et al., 2012; Wingenbach et al., 2006). For example, participants frequently expressed interest in aspects of Belize relevant to their professional foci (e.g., ecology, wildlife sciences, social sciences) throughout pre-trip meetings and discourse. However, the pervasive interest in Belizean culture was a subtle and implicit theme that only came to the forefront through the prelection exercise. Planners could use this finding to provide additional cultural/contextual information to participants, perhaps through readings, speakers native to the host country, or other means prior to the field experience. Incorporating more activities that demonstrate culture during the trip might also be possible.

Additionally, the TLEG program is designed to enable current and future faculty participants to deepen their understanding of cultural contexts in order to produce teaching modules that provide international contexts to climate change education at the undergraduate level. Prelection offers an opportunity to explore participants' areas of knowledge, misconception, or ignorance. As noted, several of the emergent themes of this study contained polarized attitudes and assumptions. These existed across a range of themes, from physical

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characteristics and travel conditions to cultural and socio-political realities. Having these findings allows planners to identify key areas to provide information, incorporate activities and conduct knowledge-building exercises to address these gaps through either pre-trip or in-trip modifications (Gouldthorpe et al., 2012b; Harder et al., 2012). Understanding these elements prior to travel can allow for a more compatible, appropriate and meaningful experience to be constructed. In fact, the results of this study were used in planning and delivering the international field experience in Belize. Emergent themes from the data allowed study abroad organizers to address the identified misconceptions and knowledge gaps by providing additional cultural information and supplementary readings in pre-trip meetings to better prepare participants.

In terms of research implications, this study also has potential for both reproduction in other contexts and expansion. As discussed, the value of preflexion exercises has been demonstrated for improving the quality of learning (Jones and Bjelland, 2004). In this case, the preflexion themes were provided to current and future teaching faculty participants before the trip as part of the member-checking process. Participants informally reported that knowledge of the preflexion results was useful in preparing for the trip and for in-country data collection. Specifically, the preflexion results allowed participants to address and/or minimize biases that may have distorted the presentation of the culture and role of climate change in Belize in curricula materials. Potentially this could also improve the quality of the completed RLOs, which to date have been created by each faculty and doctoral student pair for implementation in undergraduate courses. However, additional research using this and other methodologies can create a greater understanding of the preflexion process.

Furthermore, while this study stopped after identifying emergent themes from the preflexion data, it is also recommended that future studies explore emergent themes in greater depth. Common responses or those that were particularly polarizing (e.g., cultural and socio-political expectations) could be explored through follow-up interviews, focus groups, or other means.

Additionally, research utilizing preflexion should seek to include in-trip monitoring and post-trip evaluation (when feasible) to assess changes in perceptions and attitudes. This way, beliefs can be compared at different stages and framed by different components of the international experience. Participants should be encouraged to reflect on the rationale behind their beliefs and data could be gathered through journaling, semi-structured interviews, or other methods. Guiding questions could be built from the emergent themes

established by the preflexion exercise or the original two research questions could be asked at different stages of the trip. A similar strategy was used with participants during the Belizean field experience. Focus groups were conducted using this study's research questions and preliminary findings did indicate changes in attitudes and perceptions, although further analysis is required.

A close approximation of the preflexion instrument should also be used post-trip to identify attitudinal changes in participants as a result of the field experience and to assess the impact of the field work. Again, participants in the Belizean program completed post-trip reflections as recommended and data analysis is pending. It is recommended to also assess participants' reactions to the use of preflexion in framing learning during the trip and/or the overall learning experience. Systematic research that includes preflexion, in-trip reflection and post-trip reflection can better explore participants' perceptions of this and other international field experiences and demonstrate the value of this methodology for reproduction and use by other groups of participants within academia.

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