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Lived Experiences during International Service Learning: A Semiotic Analysis of Photo Journals

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Abstract

International service learning (ISL) is a pedagogical approach used to prepare students to be global citizens and has emerged as a popular short-term program model for international experiences. Few studies of ISL have integrated semiotic photo analysis into their evaluations. Combining students' photographs with text encourages reflection on knowledge and experiences as well as how they are related. The current study used semiotic analysis to understand the lived experiences of students on an ISL to Guatemala. The participatory nature of the research process was critical to the semiotic analysis, as the researchers had an understanding of the cultural perspectives and traditions that emerged in the images which could have been overlooked by a researcher without knowledge of the specific cultural context. Participants kept a photo journal of 10 images and associated narratives to depict their experiences on the ISL. Both semiotic and content analysis were conducted on each journal entry. Coding yielded nine themes: new perspectives, personal connections, impact of coffee, intercultural comparisons, reality of life in Guatemala, cultural values, impact of ISL, connection to photograph, and sense of place. Combining the semiotic and content analysis yielded concurrent meanings through narrative and visual reflections, which, when combined with the researchers' participatory knowledge of the experience, informed future ISL projects for the research and teaching team. The combination of visual and narrative methods required students to think about what story they will tell about their experience, and brings new layers of meaning to the reflection process.

Keywords: photo-based methods, experiential education, educational evaluation, Guatemala

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Introduction

As significant shifts occur in the pedagogy of higher education, research methodology, and community development, civic engagement and experiential learning are highly valued as holistic educational processes toward sustainable social change (Peterson, 2009). Short-term international program models have increased in popularity with students interested in international experiences (Bunch, Rampold, Cater, & Blackburn, 2018). International service learning (ISL) is a pedagogical approach used to prepare students to be global citizens (Bringle & Hatcher, 2011) that has emerged as a popular short-term program model for international experiences (Bunch et al., 2018). The nexus of ISL, cross-cultural interactions, and agriculture allows students to examine, dissect, and understand the complex relationship between the social and natural sciences (Roberts, Raulerson, Telg, Harder, & Stedman, 2019). Reflective journaling is often used during ISL experiences to solidify participants' concrete experiences during the ISL, an experiential learning environment, into learning and knowledge creation (Kolb, 1984; Roberts et al., 2019). Reflection also allows participants to critically examine their experiences during ISL (Roberts et al., 2019).

Visual methodologies are a relatively new analysis procedure in a majority of disciplines (Glaw, Inder, Kable, & Hazelton, 2017). Many studies have evaluated ISL experiences through examining emotion, cognition, and learning style (Hains, Ricketts, & Tubbs, 2012; Lamm, Cannon, Roberts, Irani, Unruh Snyder, Bredemuhl, & Rodriguez, 2011), and other studies have utilized photonarrative methods in their ISL evaluations (Bost & Wingenbach, 2018; Dobbins, Dooley, & Edgar, 2019; Homeyer, Leggette, McKim, & Walker, 2017; Uscanga, Edwards, & Watters, 2019). However, a review of literature found no ISL experiences that integrated semiotics into their photo analysis process. Bost and Wingenbach (2018) used a semiotics framework to analyze the effects of the photo narrative process on students' intercultural learning, but the current study differs by using semiotic analysis to understand the lived experiences of students on an ISL to Guatemala. Examining photo journals through semiotic analysis may allow researchers to better understand the lived experiences of students on an ISL because traditional qualitative methods, such as coding, may not bring to light the entire experience of the students.

Though many of the photo-based methodologies emerged as a way to “deep[en] the understanding of select marginalized groups” (Borron, 2013, p. 6), these methodologies can play a role in understanding the cultural impact of students who participate in ISL as they experience cross-cultural experiences. Photo-based methods also allow participants to focus their experiences in light of the culture in which they experience this impact, and to highlight those relationships that emerged through the process. The interpretation of images through photo-based or visual methodologies allows researchers to reveal deeper layers of meaning in the analysis process (Glaw et al., 2017).

Literature Review

ISL, which began in U.S. universities in the 1990s (Bringle & Hatcher, 2011), combined the idea of service-learning with an international setting (Ash & Clayton, 2004). In the broadest sense, service-learning involves community service and learning activities. Dewey (1986) proposed service learning as distinguished from other types of learning because it includes experiential learning, reflection, and reciprocal learning. Literature suggests ISL has the opportunity to enhance undergraduate and graduate students' experiences abroad, by enhancing their intercultural competency (Kohlby, 2016), changing students' worldviews (Kiely, 2004),

and making students feel as if they are part of the solution to global problems rather than a contributor to them (Niehaus & Crain, 2013). Moreover, ISL may also benefit students in agricultural contexts. Roberts and Edwards (2016) investigated university agriculture students participating in an ISL and their lived experiences and found “students’ cross-cultural knowledge and understandings became more complex” (p. 17).

Photo-based methods are used as a research tool in many fields, such as health care (Newman, 2010), natural resource management (Beckley, Stedman, Wallace, & Ambard, 2007), and education (Goldston & Nichols, 2009). Bost and Wingenbach (2018) found photo-based methods “have immense educational value and potential as tools to impact students’ ethnorelative worldviews” (p. 96). Examples of photo-based methods include photovoice and photo journal (Bost & Wingenbach, 2018; Madden & Dell’Angelo, 2016).

Photo journals, which often include photos and text, provide students the opportunity to reflect on their learning and share experiences through their own perspectives (Madden & Dell’Angelo, 2016). Research indicates that by combining students’ photographs with text encourages reflection on knowledge and experiences as well as how they are related (Madden & Dell’Angelo, 2016). Photo journals are derived from photovoice (Wang & Burris, 1997) and are similar in concept and application to photonarrative (Bost & Wingenbach, 2018). Madden and Dell’Angelo (2016) found students who created reflective photo journal entries “developed an understanding for how that content was connected and coordinated to a bigger picture” (p. 27). Edgar and Rutherford (2012) described the importance of analyzing both text and photos in order to understand the entire context of a message. Photo journals may be particularly useful in understanding students lived experiences during ISL experiences in that students must distill their experiences through these photographs to symbolize the most impactful moments of the opportunity.

Theoretical Framework

Semiotics, in the broadest sense, is “the study of signs” (Chandler, 2007, p. 2). Individuals are constantly surrounded by signs within images, actions, and words that must be decoded (Saussure, 1959). Semiotics involves the signs mentioned in everyday speech as well as anything that may stand for something else (Chandler, 2007). In simple terms, an object is considered a sign if it has “meaning beyond the object itself” (Edgar & Rutherford, 2012, p. 17). Images may contain sign relations that help characterize meaning and analysis within an image or photograph (Edgar & Rutherford, 2012). Edgar and Rutherford (2012) noted semiotics quantifies the meaning of an image via visual content analysis, and explained “semiotic methodology is used to provide researchers with information about the content of images and provide an understanding of how the audience would interpret the image and the effect it could have on building perceptions” (p. 18).

There are three types of signs in semiotic theory: iconic, indexical, and symbolic (Peirce, 1931-58). Iconic signs, or icons, are similar in resemblance to what they represent. For example, an icon may be the drawing of the gender of a person allowed in a bathroom. The most common example of icons are photographs that are purposely used as a representation of what they are depicting (Lester, 2006). However, icons do not have to be visual (Chandler, 2007). Indexical signs have a logical association with what they represent. For example, a photograph of a smokestack emitting large amounts of smoke represents pollution (Lester, 2006). Another example examined by Peirce is a sundial or clock because they indicate time (Chandler, 2007). Typically, it may take longer to interpret an indexical sign than an iconic sign. Symbolic signs

are abstract and do not have a logical connection with what they represent. For example, symbols may be “words, numbers, colors, gestures, flags, costumes, most company logos, music, and religious images” (Lester, 2006, p. 58). Unlike icons and indexical signs, symbols must be taught, which creates a heavy social and cultural influence on them. Considering symbols are culturally and socially imbedded, they are typically passed on from generations and include more emotions from viewers than iconic or indexical signs (Lester, 2006).

Purpose and Research Questions

The purpose of this study was to understand the lived experiences of participants on an ISL to Guatemala. The research questions that guided this study were: a) What themes emerged from the narratives associated with each journal?; b) What iconic, indexical, and symbolic characteristics emerged from the photographs?; and c) What story do the four photo journals tell about participants’ experiences during the ISL?

Methods

The present study employed qualitative content analysis methods based on semiotic theory to analyze photographs from student photo journals during an ISL to Guatemala. Four students who applied were selected for the ISL from a Higher Education Challenge grant-funded graduate course, *Global Horticulture and Human Nutrition to Enhance Community Resilience and Food Security*. Students completed the coursework prior to the ISL. This line of inquiry followed a participatory methodology and research design, as the researchers used their contextual knowledge through participatory observation with the participants to emphasize the voices of those being studied through the research process (Steinberg, Bringle, & McGuire, 2013). Autophotography, an ethnographic research methodology in which the researcher and reader view data through the participant’s view through photography (Glaw et al., 2017), also guided the research design.

Participants kept a photo journal of 10 photos and associated narratives to depict their experiences on the ISL. The purpose of the photo journals was to allow students to reflect and tell a story through pictures and narratives about their international experience. Both semiotic and narrative content analysis were conducted on each journal. The semiotic analysis was conducted in two phases for each photograph: (a) identifying the iconic, indexical, and symbolic characteristics of each photograph, and (b) identifying the connotative (positive, negative, neutral) tone of each photograph. The content analysis consisted of identifying the emerging themes within the associated narratives and the connotative associations within each narrative. This project maintained inter-coder reliability through a comparative assessment of all 40 images in which two researchers independently coded for semiotic characteristics in each photograph and then compared the identified characteristics to ensure holistic capture of the iconic, symbolic, and indexical characteristics in each image. Two photographs were selected for results presentation from each of the students’ photojournals. The selection of these images were based on the criteria of capturing a significant moment for the students while in country, the ability of the photograph to be anonymized for privacy, and the relation of the photograph to the students’ graduate studies.

One researcher spoke Spanish, which led to contextual differences in the analysis process. One participant also spoke Spanish and had family who was Guatemalan, which influenced his experience and subsequent reflection. The participatory nature of the research process was critical to the semiotic analysis, as the researchers had an understanding of the

cultural perspectives and traditions that emerged in the photographs which would have been overlooked by a researcher without knowledge of the specific cultural context required for some of the coding process. The researchers gained this cultural perspective to guide data analysis by traveling with the participants in country. This yielded richer analyses of the photographs and the narratives through semiotic and content analysis.

Results

The dual analyses from the photographs and the narratives revealed impactful moments from the participants' perspective about the ISL. The research questions were discussed in relation to the relevant findings for each question. The first section describes the emergent themes from the narratives. The following section contains the results for the first and second research questions, as the iconic, indexical, and symbolic characteristics are discussed in relation to the story each participant told in their journal.

Emergent Themes from Photo Journal Narratives

The participatory nature of the research process was critical to the semiotic analysis, as the researchers had an understanding of the cultural perspectives and traditions that emerged in the images which could have been overlooked by a researcher without knowledge of the specific cultural context. The narratives with each image were analyzed separately from the image. Coding occurred using MAXQDA and yielded nine themes: *new perspectives, personal connections, impact of coffee, intercultural comparisons, reality of life in Guatemala, cultural values, impact of ISL, connection to photograph, and sense of place*. These themes were developed from 71 initial codes.

Semiotic Characteristics and Participants' Stories

The semiotic analysis revealed varied layers of meaning in each image. This analysis revealed how four students perceived the same experiences differently, as well as the most impactful moments for each participant on the trip. Table 1 contains the semiotic characteristic for each figure presented in this section to view simultaneously with the narrative analysis. To emphasize the individual experiences of each participant, the individual participants' photo journals are discussed together as a narrative integrating the emergent themes from each participants' photograph.

Table 1
Semiotic characteristics of selected photographs

Figure	Iconic	Symbolic	Indexical
Figure 1	Man holding photograph and packaged coffee, strainer in background, table, bowl	Different packaging shows evolution of cooperative over time, impact of ECG, more opportunities for markets through different packaging	Man holding before photograph of self—growth, progression, change
Figure 2	Packaged coffee, English words, rice and beans, table, hands, pen, paper	English words indicate that its marketed outside Guatemala, old logo indicates change/evolution/progress	Packaged coffee for sale/export

Figure 3	Leaves, plants, sticks, dirt, red fruit, basket, shirt	Red coffee berries mean they are ripe, harvest yields financial gain, experiences of Guatemalan coffee farmer with harvest basket	Collecting fruit indicates a harvest
Figure 4	Eight people, chairs, man pouring beverage, chairs, people sitting, concrete structure	ECG farmer sharing his commodity with guests, concrete porch signals financial prosperity, shirt indicates he is part of an organization or business, tourism	Coffee tasting, skin color of guests could indicate they are visitors
Figure 5	Yellow wall, sign with woman in a yellow shirt, Spanish words, container with bullets	Mayan symbol of cultural heritage, machismo, bullets from ex-Guerilla fighters in the household, non-traditional gender roles, written in Spanish instead of Mayan which was spoken in the household	The sign is a form of art
Figure 6	Man gesturing, tablecloth, tools in background, coffee maker	Man conversing with someone, machetes in the background represent his war-torn past, coffee machine represents their new purpose and something to share with guests	Talking indicates someone is listening, engaging in reciprocal conversation
Figure 7	Trees, vegetation, landscape, blue sky, clouds	Beauty of Guatemalan landscape, coffee as part of landscape and beauty, integrated naturally	Coffee plants, blue sky means clear day
Figure 8	Flower on plant, green fruit, brush on ground	Blossoming coffee flower signals economic prosperity	Coffee plant, flower blossom means that the plant is producing, economic prosperity

Sparky, an agricultural education student, framed each photo journal entry as a chapter in his experience, choosing to highlight the relationships built and the impact of coffee. General semiotic characteristics for his images included notions of change, exchange, evolution, and bonding.

Sparky's photograph (Figure 1) represented the theme of *connection to photograph*, when he described "what [he] liked about the picture." It also primarily related to the *impact of coffee* theme, as he described the evolution of the cooperative and the economic prosperity experienced by Mario. Sparky explained how one can see the beginning of the first cooperative, and "then we see [Mario] in the present with his various [...] micro-lots and blends. He has been able to thrive off of coffee and has rolled with the many changes [...] throughout these years."



Figure 1. Titled: “Change: A [City] Story.” Photograph from Sparky’s journal. Picture blurred to maintain farmer confidentiality.

Sparky discussed the concept of change, stating that he believed this photograph “exemplified change,” which you could even see “in [Mario’s] expression between the two pictures.” Table 1 shows the symbolic characteristics in the photograph, which connect to Sparky’s reflection on change. The indexical characteristics also related to growth, progression, and change, but showing a man holding a before and after photograph of himself.

This photograph (Figure 2) also represented Sparky’s reflection on the concept of change, in which he connected this concept beyond change in the cooperative to personal change. This related to the theme, *personal connections*. Sparky stated, “I focused a lot on change during this trip,” and directly connected his experiences during the trip to the changes that occurred within the cooperative— “because of this bag of coffee [...], I was able to experience Guatemala and its coffee industry. I thought this was a unique moment to catch a glimpse of what the farmers started with and what they are now.” Again, Sparky evoked the theme *impact of coffee* on the lives of the farmers in the cooperative, in addition to discussing the *impact of ISL*, when he stated that he is interested not only in the impact of coffee, but also in learning about people’s personal histories and paths to get to where they are today. The symbolic and indexical characteristics of Figure 2 related to marketing, growth, expansion, and export, which coincided with Sparky’s meaning behind the photograph explained in the narrative.

Tony, a horticultural student, focused his images on cultural artifacts, coffee and the coffee plant, and personal interactions. The general semiotic characteristics for his images included financial gain, travel, cultural intersections and interactions, cultivation, and juxtaposition.

Figure 3 demonstrated, along with Tony’s reflective narrative, the theme *new perspectives*. He stated, “getting a taste of the harvesting process of coffee put into perspective all the hard work that the farmers go through in order to have high quality coffee.” He discussed how, as visitors, they had the easy job of only harvesting a few trees with fruit, rather than hiking up a volcano to harvest, and hiking back down carrying 100 pounds on their backs. His new perspective was understanding just “how much work goes into enjoying a quality cup of coffee.” He reemphasized this point by saying: “I will never look at coffee the same again, I will make sure to buy quality coffee with a known origin. This will ensure I am helping farmers directly and not buying the overpriced and lower quality supermarket coffee.” Tony’s reflective narrative indicated an intended behavior change in response to experiences on the ISL, further elaborating

upon the *impact of ISL* theme. Semiotic characteristics from Table 1 for Figure 3 included harvesting of coffee fruit yielding financial gains, and seeing a Guatemalan coffee farmer with the coffee basket connected to Tony's reflection on the hard work that goes into crafting one cup of quality coffee.



Figure 2. Titled: "It All Starts Somewhere".



Figure 3. Photograph from Tony's journal.

Tony's selected image of a farmer "proudly serving us a cup of his own coffee" (Figure 4) demonstrates the intimacy of growing coffee from seed to cup. He described how Gonzalo (the farmer) served this coffee after a hike up a volcano to his field, where the participants

harvested cherries, then returned to Gonzalo's home where they learned how to roast and grind the coffee beans according to traditional methods. Tony felt that Gonzalo "enjoyed [how] we had nothing but good things to say about [this] delicious cup of coffee." The personal experience of tracing Gonzalo's coffee through the production process, and how it connected to Guatemalan traditional coffee culture, helped this horticulturalist see the personal connections between production and culture. Tony himself is of Guatemalan descent, which provided extra nuance to this interaction, and related to the *new perspectives* theme. He stated that he appreciated "shar[ing] this cup of coffee with the farmer who put his blood, sweat, and tears [into the product] to have us enjoy this high-quality coffee." The symbolic and indexical characteristics analyzed diverged somewhat from Tony's narrative (Table 1). While the characteristics yielded concepts of sharing coffee, they also revealed financial prosperity (from Gonzalo's participation in the organization and the concrete structures in his home), the indexical characteristic about the differing skin tones of the guests was not emergent in Tony's narrative.



Figure 4. Photograph from Tony's journal. Picture blurred to maintain farmer confidentiality.

Ruth, a student of food science, included many cultural artifacts in her images, as well as images which represented cultural dissonance, such as trash littering the landscape, and bucket showers. These themes were analyzed as cultural values, changing gender roles, financial security, and impact of coffee. She also framed each entry around the community in which it was taken, echoing the *sense of place* theme.

The image seen in Figure 5 sat on top of a book case at Ruth's host family's home. She described how her host family's home had "bits of feminism sprinkled throughout it." Her host mom, Ana, a veteran of the Guatemalan civil war, "went from fighting for the indigenous peoples to fight for women's empowerment and rights in Guatemala." Ruth reflected how Ana's activism aligned with many of her own beliefs about the rights of women and the disenfranchised, relating to the *intercultural comparisons* theme. She was particularly struck by

how Ana's progressive views juxtaposed Ruth's previous conceptions of the values of rural Guatemala, a country with a strong tradition and history of "machismo." The symbolic and indexical characteristics from Table 1 for Figure 5 closely reflected Ruth's interpretation and meaning for this photograph. However, the juxtaposition noted between the Mayan cultural artifact and the Spanish words in the sign were noted in addition to Ruth's explanations of gender roles, which demonstrated further the complex history of Guatemala and their relationship with colonialization and modernization both yielding Spanish influences.



Figure 5. From Ruth's journal. Spanish words in the picture translate to, "in a [chauvinist] system, being a woman represents an act-of-resistance."

Roberto, Ruth's host dad, explained how when they moved to this community, "we traded the art of war for the art of coffee." She reflected again the *sense of place* theme, by describing the difficulty hearing him over the storm outside from an intense, pounding rain that happened every afternoon in the community. She described Roberto's infectious passion in the foreground of the photograph, with his machetes in the background—this served as "a reminder of the dark history of many of these farmers [in the community] after the Guatemalan Civil War." This narrative reflection connects to the theme of *reality of life in Guatemala*, and the lingering consequences for many of the days during the civil war. Again, in Figure 6 the symbolic and indexical characteristics in Table 1 reflect Ruth's narrative description and meaning behind the image.

Celia, a horticulture student, depicted images of animals, plants, landscapes, and infrastructure. The semiotic characteristics present in her images included prosperity, financial security, precariousness of coffee farming, and poverty. Celia's photograph in Figure 7 represents the *impact of coffee* theme. She explained how, in the image, "the coffee plant is in the foreground representing its importance to the farmers in [the community]." Celia also described how in this particular area, coffee plants are integrated "with the natural environment of the forest," demonstrating the *sense of place*. The symbolic characteristics for Figure 7 (Table 1) include the beauty of the Guatemalan landscape with coffee as part of the landscape, reflected in Celia's narrative.



Figure 6. From Ruth's journal.



Figure 7. From Celia's journal.

In this photograph (Figure 8), Celia explained her excitement to see “the coffee plants in different phases of production.” She wanted to demonstrate in her photograph the “diversity of coffee flowering and fruiting.” As a horticultural student, she recognized the *impact of coffee* and learned about coffee production from the plant to processing. The symbolic and indexical characteristics from Table 1 reflect the idea of a blossom representing a future harvest, which yields economic prosperity for the coffee farmers.



Figure 8. From Celia's journal.

Conclusions, Implications, and Recommendations

Overall, relationships with farmers and the effect of coffee were some of the major impactful experiences indicated in the photo journals. Though only two representative photographs were included for each participant, the narrative analysis of all photo journal entries supported the emergent themes and these conclusions. Participants' connection to their photographs in their journals were expressed in various ways, through a fond statement about the person or people in the image, about the feelings the photograph reminded them of from the ISL experience, or in how the technical aspects of the image reflected their own emphases and highlighted concepts from the experience.

The confluence of both semiotic and content analysis allowed the researchers to investigate how students crafted their story of the ISL through visual and narrative methods. This process adds to the current literature of methodologies used to understand the lived experiences of students during an ISL (Bost & Wingenbach, 2018; Bunch et al., 2018; Hains et al., 2012; Lamm et al., 2011; Roberts et al., 2019), as traditional qualitative methods, like coding, do not always reveal the comprehensive story of impact and experience. The semiotic analysis allowed researchers to see what images were meaningful for the students and to understand those images and the messages they told about the experience. Combining the semiotic and content analysis yielded concurrent meanings through narrative and visual reflections, which, when combined with the researchers' participatory knowledge of the experience, informed future ISL projects for the research and teaching team.

Determining new methods for evaluating ISL to better understand the lived experiences of the students is critical for service-learning pedagogy. The combination of visual and narrative methods requires students to think about what story they will tell about their experience, and brings new layers of meaning to the reflection process. The photo journal process allowed students to determine ten images that represent and distill their experience. This benefits the stakeholders of ISL to see how students construct impactful moments, which can be used to modify future ISL by allowing for more activities that facilitated impact and learning. As the photo journal methodology was combined with other methods to evaluate the ISL experiences for each participant, it gave insight to how the participants gave visual meaning to otherwise narrative reflection processes.

This form of engaged pedagogy can help the discipline critically evaluate and reinvent paradigms used for service learning (Peterson, 2009). The participants continually reflected on

the reciprocal relationships formed during this experience, and the interpretive visual meaning provided by the photo journals emphasized the importance of engaging with local knowledge to diversify students' perspectives to better prepare graduates as global citizens (Bringle & Hatcher, 2011; Peterson, 2009). Daily reflective narratives (reported elsewhere as it was outside of the scope of the current study) helped evaluators capture the essence of the total experience, as well as the minute details which contributed to the overall ISL impact; however, by having participants craft a visual story, they illuminated how they viewed the impactful moments from the trip. It also allowed an opportunity to add depth and richness (Borron, 2013) to the ISL evaluation process by co-constructing the story of the experience through the participants' perspectives. According to Kahn (2010), few individuals "consider the significance of the visual in teaching and learning, and how visual approaches allow us to teach what culture and global awareness really is" (p. 45). Perhaps researchers should evolve their methods for evaluating ISL to include photo-based methods as a way to educate and communicate with external stakeholders about the impact of their programs. The researchers encourage those involved with leading ISLs to include opportunities for participants to reflect through both written and visual forms to better understand the lived experiences during international travel.

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